

NEW

FROM THE MAKERS OF
**HOW IT
WORKS**

Under the hood of
Apple's biggest tablet

**iPAD
PRO**



Gadgets

WHY YOU DON'T
NEED A **NEW TV**

AV add-ons to improve your boxset binging

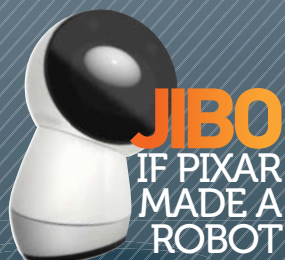
NEVER
CLEAN AGAIN!
Robot butlers tested



**WIN
£800
WINE COOLER**

HIGH TECH TOYS

THE MUST-HAVES TO MAKE YOUR INNER CHILD SQUEAL



**THE ONLY
KITCHEN GADGET
YOU'LL EVER NEED**
The all-in-one device that
takes the heat out of cooking



DigitalEdition
GreatDigitalMags.com
ISSUE 002

**HOW TO PUT
UP A SHELF
STRAIGHT**
DIY gadgets to keep
you on the level

**DRINK
LIKE
A PRO**
Best gadgets
for wine lovers

BUILD AN ARCADE MACHINE 🎮 SUPERCHARGED SKIING TECH 🏂 CRAZY CART 🚗
EVERY NERF BLASTER 📦 REAL-LIFE JET PACK 🚀 BIGGEST AND BEST RC CARS 🏁

Hoverboard

Self Balancing Scooter

UK STORE - **UK 3 PIN PLUG** - 12 MONTH WARRANTY



**ALL
TERRAIN**



funstock.co.uk

AVAILABLE IN
6 COLOURS

These are the toys you're looking for



One of the most exciting toys of the year is BB-8, the unofficial mascot for *Star Wars: The Force Awakens*. However, unlike R2-D2 or C3PO from the original movies, BB-8 is not just a man in a suit or even CGI trickery, but an actual working droid that you can buy. You can control BB-8 with your smartphone and use augmented reality to recreate the iconic 'Obi Wan, you're my only hope' scene. The tennis-ball-sized bot also responds to voice commands, shout 'it's a trap!' and watch her run away. She can also sense her environment through bumping and mapping, just like the Roomba robot vacuum. Packed with so many features, we couldn't resist taking the BB-8 apart to find out how she works, so read on for a full teardown.

Nevertheless, BB-8 is only one of a new generation of high-tech toys. This issue we give you the definitive guide to the best gadgets around that aren't just for kids, including the most powerful remote control cars, a round up of every Nerf blaster you can buy right now, a step-by-step guide to how to fly a drone and even how to build your own dream arcade machine.

Jack Parsons
Editor

THE TEAM'S TOP TECH THIS MONTH

Jack Parsons Editor

The Makita Autofeed (page 104) looks like a machine gun, but it's really a supercharged screwdriver.



Dan Hutchinson Editor in chief

The all-new Apple TV (page 64) is set to reinvent mobile gaming for the big screen at home.



Adele Jordan Production Editor

My favourite is Pepper the robot (page 29). It's useful, unbelievably clever and just plain cute!



Duncan Crook Senior Art Editor

Grabbing a Nerf blaster (page 42) and shooting an innocent bystander can be very satisfying.



Harriet Knight Assistant Designer

It has to be the Rocket Skates (page 50). They take some mastering but are ridiculously cool.



Hello

EVERYONE'S

ALREADY TALKING

ABOUT Gadget™

**Let us
know what
you think...**

Now you have Gadget
in your hands we'd love
to get your views on the
second issue.

Before going to press, we asked for
feedback on the pages of **Gadget**

This is what you said...

"I've never seen so much
emphasis put on the
intricacies and technicalities
of how my favourite gadgets
work. I also liked how advice
was given on how I can
improve my own experiences
with various devices."
sinclairuser, via email



Katie Kilford

Southampton

Definitely something that I would commit
to buying long term! It'll save buying several
different genres of magazines. The previews
look great and I love that it covers sports,
gaming, cars and tech! :)



Scott Silver

Newcastle upon Tyne

I already subscribed weeks ago!! Looks fab!
Not just a catalogue of unaffordable tech!
The 'other' mags just show you expensive
tech from press shots surrounded by specs.



Jeff

Albuquerque, New Mexico

I love anything technology related and this magazine does provide a great new look into the mechanics of products. I will DEFINITELY buy the first issue.



Chris Shaw

Stoke-on-Trent

Informative... (just the right level of product information). Expansive... (covers a variety of gear). With a clever **How it Works** touch too.



Drew

London

I especially liked the content of the Oculus Rift article, and the layout of the coffee machine and Nerf gun articles.

"I enjoy *How It Works*, *All About Space* and *World of Animals*, and a general tech mag from my favourite publishing company is ace!"
Mike, via email



Leo Ollson

St Helier (YouTube: Tech Leo)

I like the magazine and think it's a great new approach. I would love to see the new and affordable gadgets in this magazine.



Darren Mansfield

Huddersfield

Yes will definitely buy the first magazine, it looks different and informative.

Get in touch...

Turn to page 92 to discover how you can join our reader panel and help shape your new mag



hello@gadgetdaily.xyz



@gadget_magazine



facebook.com/gadgetmagdaily

I love Gadget magazine.

Vino, via email

Less superficial than *Stuff & T3*.

Steven, Northampton

Subscriber issue just landed on the mat – can't wait to get stuck in :D

Sharon Wallis, @_Sharonwallis_

I like the magazine. It has a fresh layout and covers the basics quickly with more information readily available.

Tom, via email

Just received issue 1 of @gadget_magazine & am seriously impressed with the next-gen tech included. Sign me up!

Cara Davies, @Caragoesawol

Just bought the first edition via my iPad.

Looks a good'un. Best of luck with the publication.

David Fleming, @Greyingbeard79

I've always wondered what gives a Nerf gun such power.

Neil, via email

Finally got hold of Gadget and I'm loving it – my Xmas list just got bigger!!

Mr Wiggins, @MrWiggins2

Finally got to open my magazine last night.

Love the layout and style! Hardly any ads – hope it continues this way!

Scott Silver, via Facebook

I love it!

Knewby, via email

Contents



STARTUP

008 KICKASS KICKSTARTERS, near future tech & THE LATEST LAUNCHES

064 YOU DON'T NEED a new TV
The total guide to AV add-ons for better boxset binging

074 YOU NEED TO START CARING ABOUT THE iPad again
Say hello to the iPad Pro

078 GET SMARTER SOUND FOR your smartphone
Meet the studio amp that fits in your back pocket

080 SAY GOODBYE TO CLEANING WITH THESE ROBOT BUTLERS
Sit back, relax and let these bots clean the house for you

084 HOW TO TAKE SHOTS ON your iPhone THAT DON'T SUCK
Take shots like a pro

086 THIS IS PRETTY MUCH THE ONLY KITCHEN GADGET YOU'LL EVER NEED
Take the heat out of cooking

088 YOU DIDN'T KNOW SKI GOGGLES WERE THIS COOL
Recon Snow2 offers a HUD to survive the slopes

094 DRINK (responsibly) LIKE a pro
The best gadgets for getting the most out of booze

100 BREATHALYSERS: coming to a glove compartment near you
The pocket-sized gadget that's invaluable on a night out



104 DIY
How to put up a shelf straight

106 car MECHANICS
How to jumpstart your car

108 eBay
4 steps to avoid terrible eBay customer service

110 iTunes
How to set up a family iTunes account

112 wrapping presents
5 tips to wrap any gift

114 whatever Happened To...
The Power Glove



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WIN
A WINE COOLER
WORTH
£800
PAGE 098

2000 HIGH TECH TOYS



PAGE
016

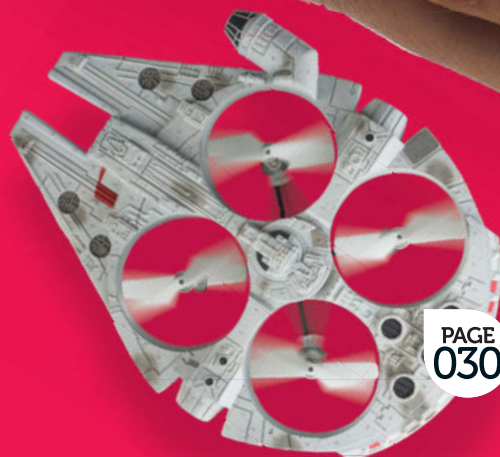


PAGE
058



PAGE
046

PAGE
028



PAGE
030



PAGE
044

014 HIGH-TECH TOYS
Not just for kids



016 SO YOU WANNA BUY
a drone?

Master the flying marvels

022 THIS IS THE MOST
powerful radio-
controlled car you
can buy right now

Who said awesome things
shouldn't come in big
packages?



028 THIS IS THE DROID
YOU'RE LOOKING FOR
5 reasons you will love BB-8

034 8 ROBOTS THAT COULD
BE OBEYING YOUR
COMMANDS RIGHT NOW
Get that feeling of power

038 BUILD YOUR OWN ROCKET
Get ready to blast off

042 EVERY NERF BLASTER YOU
can buy right now

044 THIS AIN'T YOUR
GRANDAD'S RACING SET
Put your Scalextrics in the bin

046 ALL YOU NEED TO KNOW
ABOUT TOYS TO LIFE
BEFORE THEY TAKE
OVER THE WORLD
They're alive!

048 ALL YOU NEED TO KNOW
ABOUT ROCKET SKATES
Zoom past your friends

050 PLAY AROUND LIKE
an F1 DRIVER
Take a whirl in a Crazy Cart

052 WE GAVE THESE
CONSOLES TO RETRO
gamer AND THIS IS
WHAT THEY SAID
ZX Spectrum Vega and more

054 BUILD YOUR OWN DREAM
arcade machine
Live the fantasy

056 ALL YOU NEED TO KNOW
ABOUT THE PINBALL
MACHINE YOU'RE NOT
ALLOWED TO BUY
Plus Kate Morris' pinball picks

058 BUILD A POTATO
powered clock
And 6 other
cool experiments



060 SERIOUSLY WHY
DON'T YOU OWN
THIS STUFF YET?
Lots of fun for under £50

STARTUP

KICKASS KICKSTARTERS • NEAR FUTURE TECH
LATEST LAUNCHES



Videogame-like controls

The aircraft uses a fly-by-wire (semi-automatic and computerised) system, with dual joysticks and a touchscreen available for pilots to use to control the jetpack

Carbon structure

The main beam at the centre of the jetpack is made from carbon fibre with a foam core. The fuel tank is protected by kevlar and a fuel-resistant epoxy resin



Can you fill it up at a petrol station?

The Martin Jetpack's V4 engine produces 200 horsepower at 6,000rpm and runs on regular automotive petrol and two-stroke oil (so no rocket fuel required)

NEWS

009

WE WERE PROMISED JETPACKS CAN MARTIN AIRCRAFT DELIVER?

ETA JAN '17

Those are some big fans you've got

Thrust is provided by two large fan ducts made from carbon fibre, with air drawn into the ducts from the top, accelerated by the rotors and then redirected below

The jetpack that Sean Connery (as James Bond) piloted in 1965's *Thunderball* was a real-life, working contraption. But some 50 years later, we're still waiting for the technology to become reliable enough for consumers to enjoy. Unbelievably, the wait is almost over, with Martin Aircraft promising to have its personal jetpack on sale by 2017.

You'll want to start saving your pennies for the \$150,000 (roughly £98,000) it's going to cost for you to buy one, although you might consider that a fairly reasonable price considering it has been in development for 35 years. Two joysticks and a touchscreen are used as controls and your purchase price includes a full training programme to make sure you can fly safely.

The Martin Jetpack is built from carbon fibre and aluminium, with two large fans on either side to propel you into the air. Test flights have been running since 2011 and earlier this year at the Paris Air Show the jetpack was flying for up to 30 minutes at a time. With a vertical take-off and landing system (and an emergency parachute), its makers think it could prove useful for emergency rescue teams as well as adventurous millionaires.

There's just one other issue to consider: flight regulations. As this is a whole new type of aircraft, it's not clear yet just when and where you'll be able to pilot it, but aviation authorities are going to have to make a decision by 2017.



A long time coming – the jetpack has been in development for 35 years!

Range and endurance

The first jetpacks to go on sale will have a maximum range of around 30 miles and a maximum flight time of about 30 minutes

Comparative speeds and altitudes of flying machines



STARTUP

MEET JIBO

THE SOCIAL ROBOT WHO WANTS TO SAY HELLO

ETA 2016

Jibo is a little like Apple's Siri in physical form: this friendly, artificially intelligent, rotating pod raised millions of dollars on Indiegogo last year and is scheduled to finally go on general sale in 2016. From taking pictures to reading bedtime stories, it's designed to make your domestic life easier in all kinds of ways. It marks another step forward in the development of digital assistants and the robot helpers we've been waiting for.

It can sit on your kitchen table and take group photos of the family, for example, or let you make a video call to mum and dad. By integrating with your

smartphone (Android or iOS) Jibo is able to read out messages, voicemails and notifications, with an eventual aim of wanting it to act as a smart home hub too.

It follows in the footsteps of something like Amazon's Echo speaker, but with the addition of a screen and photo-taking capabilities thrown in as well. If you can put up with its cute and perennially cheerful personality, Jibo could be the robot buddy you and your kids have been dreaming of – it has almost everything you get from the Google Now, Siri and Cortana apps, but in a compact object that lives on your sideboard.

Mini computer screen

The HD LCD touchscreen is used for everything from showing your emails to displaying the pages of a children's storybook

Size of a kettle

The final version of Jibo will be about 11 inches tall with a 6-inch base. The estimated weight is 5 pounds

Smartphone-friendly

Jibo works with both iOS and Android devices, and there's also a web interface in development. What's more, Wi-Fi and Bluetooth are supported

WHAT CAN JIBO DO?

Be a part of the family

Jibo can take group shots of your family and friends, track faces automatically and direct video calls through to the dinner table.



Order takeaway

Jibo is always connected to the web, so it is capable of ordering some takeaway food for you whenever you ask it for a menu.



Read bedtime stories

Jibo can help keep an eye on your kids (it recognises faces, remember) and even take over bedtime reading duties if you fancy a night off.



Read out messages

Because Jibo is connected to your smartphone, it can read out your messages when you're busy doing something else – like cooking.



SHAMMANE SMARTWATCH

ETA Apr 2016



Shammane wants to rival the Apple Watch with French design



There's no shortage of smartwatches out there at the moment, but the Shammane has still managed to catch the attention of hundreds of backers on Indiegogo. Its main selling point is its subtle elegance — sure, it's going to show your smartphone notifications, but the Shammane isn't going to make a song and a dance about it.

A built-in pedometer for counting your steps, IP67 waterproofing (enough to survive a heavy rainstorm), three days of battery life (more than most smartwatches on the market) and a choice of removable straps all add to the appeal. What's more, it's compatible with

both iPhones and Android handsets, so you're not restricted by your choice of smartphone. Plus, you can keep on using your watch if you decide to switch between Apple and Google.

With so many smartwatches providing similar functionality, the look and feel of the timepiece is going to have a major influence in tempting people into a purchase and the Shammane is definitely trying its hardest to appeal to the fashionable jewellery crowd. Whether it's got enough to attract the geeky crowd, who are more likely to prefer Android Wear or the Apple Watch, remains to be seen, but it's off to a good start.

SMARTWATCH STATS

\$20,338,986 **1,300** **£123.23**

Pebble Time funding (a Kickstarter record)

Native Apple Watch apps available

Android Wear watch average price

720,000 **101 million** **3.6m**

Android Wear devices sold in 2014

Estimated smartwatch shipments by 2020

Apple Watch estimated sales Jun-Aug 2015

4 REASONS TO DIGITISE YOUR BOOKS WITH THE CZUR SCANNER

ETA JAN 2016

01 20 times faster According to its inventors, thanks to the powerful processor fitted inside the Czur Scanner, it can scan pages up to 20 times faster than a traditional scanner.

02 Street smart After scanning the pages, the Czur applies its special set of algorithms to compensate for any page curves, wonky edges, fingerprints and other distractions from the main text.

03 Flexible scanning The Cruz Scanner is capable of handling books, single sheets of paper and even three-dimensional objects, thanks to its unusual design. Oh, and it works as a projector too.

04 Ditch your paperwork Not only will the Cruz Scanner digitise anything you want it to, it also makes the text readable and searchable on your computer — so you can give away your paper copies if you are so inclined.



Amazing camera

With over 16 million pixels, the camera provides clear images, good enough for daily use

Wi-Fi connected

The Czur Scanner is connected to Wi-Fi to send scans to your laptop, smartphone or tablet

Plug it all in

The Czur Scanner is fitted with various export slots, including HDMI and USB ports

KICKSTARTER INSTRUMENTS THAT ROCK!

The 10 best crowd-funded musical instrument must-haves

Love
music?
For smarter
sound quality,
turn to page
78



01



02



03



04



05



06



07



08



09



10

01 Arpeggio

A portable arpeggiator, sequencer and synthesiser in one, giving you the power to easily create, save and perform melodies.

£130 | \$200 | goo.gl/Oh9hrR

02 Roli Seaboard Rise

Rise offers advanced sound spectrums, intuitive touch interaction, gesture control, sensitivity and more.

£520 | \$800 | goo.gl/7m5na3

03 Minim

Thought it's only the size of an iPhone 6s Plus, Minim can control all kinds of musical software.

£84 | \$130 | indiegogo.com/projects/minim#/

04 Mogees

Mogees enables you to turn anything into a musical instrument. It converts vibrations from objects and surfaces into tunes via an app.

£40 | \$61 | mogees.co.uk

05 Clever Fox Tremolo Pedal

A tremolo guitar pedal that adds vintage sounds to your instrument. It's designed to be as simple as possible.

£65 | \$100 | danielmartindiaz.com

06 ACPAD

The ACPAD claims to be the world's first wireless MIDI controller for acoustic guitars, sitting right on top of your instrument.

£156 | \$240 | goo.gl/sY58dm

07 OWOW instruments

OWOW instruments are designed so that anyone can get creative with music, whether they can play a traditional instrument or not.

£35 | \$54 | owow.io

08 Artiphon Instrument 1

It looks like a cut-down guitar, but it's actually a digital device that can be a number of different instruments.

£292 | \$449 | artiphon.com

09 AUUG Motion Synth

The AUUG Motion Synth sits on top of your iPhone or iPod touch and turns it into a motion-sensitive synthesiser.

£97 | \$149 | auug.com

10 Pianu

Offering "the fun of Guitar Hero combined with a real musical instrument", it is ideal for beginners.

£25.99 | \$39.95 | pianu.com



THE WORLD'S BEST TV-BOOSTING SOUNDBASES JUST GOT BETTER



DM55



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You're one connection away from award winning TV sound

- Sits under or in front of TV, transforming sound with powerful 2.1 stereo and surround performance
- Enjoy wireless music from all your devices via aptX Bluetooth
- Great bass: no subwoofer required
- Voice mode for super-clear dialogue
- Easy, single-cable install
- Includes learning remote
- Available in white, silver & black*

* DM100 silver & black only

Praise for Canton soundbases

[The DM55] sets the standards for affordable soundbases

What Hi-Fi? Sound and Vision

Hands down the best sounding soundbase on the market

Trusted Reviews

Reaches a level of sophistication you simply don't expect from a soundbase

Home Cinema Choice

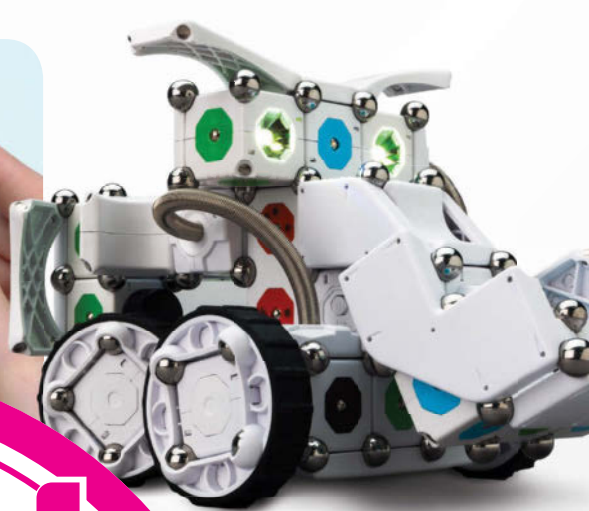
Super-sized soundbase makes movie night unmissable with killer sound quality

Trusted Reviews

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HIGH TECH TOYS

WELCOME TO 45 PAGES
OF HIGH-TECH TOYS
THAT WILL MAKE YOUR
INNER CHILD SQUEAL,
FROM THE BIGGEST AND
BEST REMOTE-CONTROL
CARS, TO TOP TIPS FOR
FLYING A DRONE, STAR
WARS ESSENTIALS, THE
BEST PINBALL MACHINES,
ROCKET-POWERED ROLLER
SKATES AND EVERYTHING
IN-BETWEEN...



A close-up, low-angle shot of a red drone in flight. The drone's propellers are blurred, indicating motion. A camera is visible on the underside of the drone. The background is a bright, slightly out-of-focus white surface.

SO YOU WANNA BUY A DRONE?

Drones aren't just for the military anymore. These flying marvels are now taking over our lives!

Drones are everywhere and whether you like them or not, you're only going to see more of them appear. These flying beauties are becoming a commonplace hobby to undertake, and why not? They're amazingly fun to fly, cheap enough for the average joe to get involved with and for the real enthusiast, there are kits available where you can build your own from scratch. Drones are so sophisticated nowadays that the technology used to power them has transformed over the past

couple of years. Things like cameras, accelerometers and GPS are becoming must-have accessories, opening up a whole new level of interactivity and unlocking some pretty exciting features. Drones are also changing their spots, so while you'll still find large, heavy drones sometimes taking to the sky, don't be surprised to find the occasional micro drone flying overhead that could fit in the palm of your hand. There's no doubt about it, drones are awesome – we are here to tell you why.

"Get a whopping 29mph
out of the Bebop's
lightweight frame"



£400 | \$500
parrot.com

Parrot Bebop Drone

The Bebop is for those who have a need for speed. In full flow, users can expect to get a whopping 29mph out of the Bebop's lightweight frame.

Plus, you can even fly it with your smartphone.



29 MPH



250M
RANGE



400G

018

WHICH DRONE IS FOR YOU?

There's one for every occasion



No controller needed

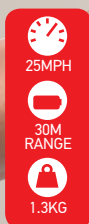
Lily flies through the air by itself and simultaneously films all of your adventures below

Complete autonomy in the sky

Lily Camera

Not only can the Lily Camera achieve lightning-quick speeds of 25mph when in the sky, it's one of the very few drones that offers a complete autonomous flying experience. It requires no user input apart from turning on the drone itself.

£600 | \$800 | lily.camera



Perform stunts with ease

Air Hogs Helix X4 Stunt

Air Hogs is the equivalent of owning a skateboard in the sky. Thanks to its gyro-stabilisation technology, users are able to perform amazing tricks and stunts in the air – but believe us when we say it takes some practice at first!

£70 | \$80 | airhogs.com



Stunt drone

Flip and barrel roll at the push of a button

How to fly your drone without breaking it



01 Hover your drone

Keeping the drone close to the ground without it crashing is notoriously difficult. Get some experience by raising it to 1.5 metres above the ground and practice holding it still.



02 Take short hops

Learning the basics of moving backwards and forwards may seem easy, but make sure you practice moving around without your drone stuttering or failing.



03 Counteract the wind

The wind will be your biggest annoyance when it comes to controlling your drone. Gently push against the wind on your controller to level your drone.



HD video

The 4K camera gives you a live HD view of the ground



5 ESSENTIAL SAFETY TIPS

Stay safe when flying your drone

01 Always ensure you never fly your drone anywhere near people's bodies or faces.

02 Be sure to switch off the drone's motor before you turn off the controller handset or remove the batteries.

03 Remember to remove the rotors when you're not using the drone. This way, it can't do much on its own.

04 Don't risk flying unless the weather conditions are good and you know that this is going to continue.

05 Follow instructions for recharging Lithium Polymer batteries as they need better care than regular ones.



See the world through 4K

DJI Phantom 3

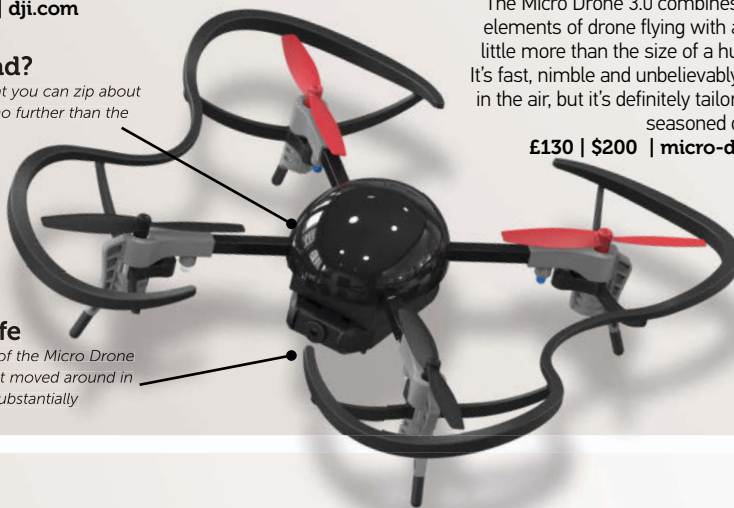
The Phantom 3 is one of the new pioneering drones to come with a built-in camera that's capable of recording 4K footage. The accompanying remote control gives the flyer complete control of every movement that the Phantom 3 makes.
£620 | \$700 | dji.com

Petrol head?

Want a drone that you can zip about in the air? Look no further than the Micro Drone 3.0

Keep it safe

The smaller size of the Micro Drone means it does get moved around in the wind pretty substantially



Flight in the palm of your hand

Micro Drone 3.0

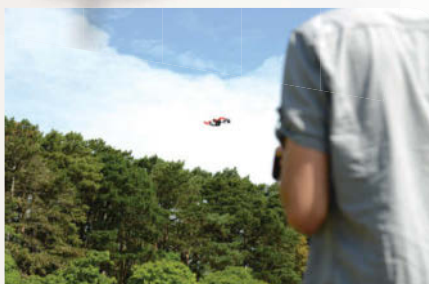
The Micro Drone 3.0 combines all the best elements of drone flying with a build that's little more than the size of a hummingbird. It's fast, nimble and unbelievably agile when in the air, but it's definitely tailored for more seasoned drone users.

£130 | \$200 | micro-drone.co.uk



04 We have liftoff!

Learning to take off with your drone can be difficult. With the drone on the ground, gently press forward on your joystick until you've reached a height of around two metres.



05 Travel long distances

When you get comfortable with controlling your drone, fly it out to its maximum possible range. From here, use the skills you've just learned to get it back to you safely.



06 Take a selfie

If you've got a built-in camera on your drone, you'll want to make sure you master your camera controls. Hover the drone in front of you and take a selfie.

WANNA KNOW HOW A DRONE WORKS?

What sort of technology will you find
in your everyday UAV?

Shell

Unless you crash your drone very neatly, you will usually be able to see this shell. It is the casing: the fuselage of the UAV. Bright colours really help you spot this from a distance

Booms

The arms of your drone are crucial. They have to be light, but strong and thin enough to not get in the way of the rotor's downdraft. The length determines stability and manoeuvrability too

Flight controller

You have positive flight control so that you can choose where the drone goes. This unit also handles the conflicting pressures and strains to keep the flight stable in wind

Body

The core of your drone is this hub – all the physical elements connect to this, which is always at the centre of gravity of your UAV. Rotors, landing gear and computer controls connect here

GPS aerial

Hopefully you can always see where your drone is, but with GPS it knows this exactly and will make decisions based on this. It may also record GPS data along with your video

DO'S & DON'TS

Avoid these common drone faux pas at all costs

Is it legal?

Laws regarding drones frequently change, so keep a close eye before you fly

Charge it

Make sure both the drone and accompanying controller are charged

Pick your spot

Always keep your drone in your line of sight to maintain total control

Know your limits

Drones can be difficult to fly, so make sure you test yours thoroughly

Fly in rain

It may sound obvious, but don't fly your drone if wind levels are high

Mishandle them

Drones don't respond well to being bashed about, so handle them with care

Touch the blades

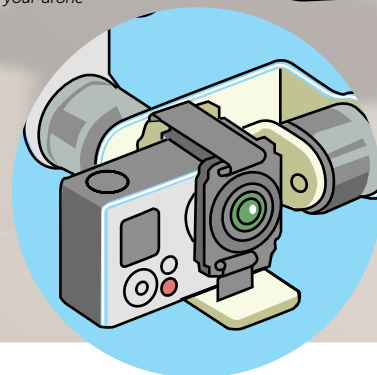
While they may look flimsy, drone blades can be sharp and cause serious damage

Travel too far

You can expect 20 minutes of play time with your drone between charges

Camera gimbal

Record the world around you by investing in a detachable camera that can be placed on your drone



DRONE GLOSSARY

Essential jargon you'll need to learn

Accelerometer

An electronic instrument used for measuring acceleration on a given path.

Attitude

If you're new to flying, don't mix this up with altitude or bad behaviour on the drone's part. It is the orientation of the UAV – whether it's tilting forward or flying upside-down.

Autonomous

Not subject to outside control, this refers to when a drone is flying by itself on a set path using GPS or other means, rather than actively steered with a controller.

Bind

This is connecting your controller to your drone. It is like pairing your phone to your earpiece, except it doesn't normally use Bluetooth, of course.

CAA (Civil Aviation Authority)

This is the UK body that's in charge of all flight issues and licences. When you read American forums or books, you'll see references to their equivalent, the FAA (Federal Aviation Authority).

Controller

The device you use to fly the UAV. They can be exactly the same as old-style helicopter remote controls or you can use apps on your phone. Without exception, a real controller is better than using your phone.

Downdraft

The force of the wind from the rotor blades when they're spinning. It's partly that which gives the drone its lift, and partly the shape of the blades and how the air flows over them. It can, however, be an issue when you're hovering near the ground because the force reflects up and makes flying trickier.

FPV (first-person view)

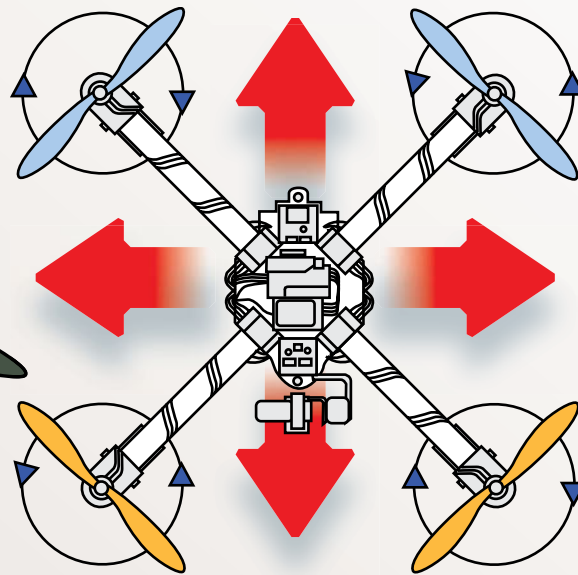
A way of controlling your drone that lets you view what the drone is seeing from the air in real time. By using goggles or a display, the view from the drone's camera is relayed to you. Particularly useful for racing and to get a view from the sky.

Gimbal

This is the type of mount that lets a camera stay steady on a UAV while turning and when in high winds.

GPS

The same global positioning system used in your satnav, it is used in drones so they can know and record their position.



YEH-YAW!

Controlling your drone isn't just a case of going forwards and back

Your first few flights with a drone will undoubtedly be difficult tasks to complete and there are some terms you really should know beforehand. Tilting the front of your drone up and down is called its pitch, while leaning it to the left or right is called its yaw. When your drone wiggles from side to side, that's called its roll. Mastering these movements is key to controlling your drone when in the air and also preventing yourself from a crash that could turn your drone into a pile of unusable plastic rubbish.

Battery

Your drone isn't going anywhere without a charged battery. This is perhaps the most limiting element you'll face. Fully charged ones will typically only power the drone for about 20 minutes

Landing gear

In this example, the landing gear is an extension of the boom, but you can have more elaborate ones. They let the drone set down on the ground without anything hitting the rotors or body

Rotors

You'll see these are twisted slightly. Rotors are not straight; they are shaped exactly like aircraft wings for the same reason of aerodynamics. Their shape affects air flowing over them and that is what produces lift

"Rotors are not straight; they are shaped exactly like aircraft wings"

THIS IS THE MOST POWERFUL RADIO-CONTROLLED CAR YOU CAN BUY RIGHT NOW

Who said awesome things should come in big packages?

Do you dream of screeching tyres and burning rubber? Do you lust for speed but lack the license? Did you know that you can now take a remote control car out into the real world without getting laughed at by the jock kids and having your remote thrown into a tree? That's right, RC vehicles have had a serious upgrade for the 21st Century and it is easier than you might think to get your hands on one.

Whatever your passion – be it circuit racing, off-road domination, aerial superiority or aquatic exploration – there is an RC vehicle out there for you. If you've got a serious need for RC speed and power, then the biggest advancements in the industry also happen to see four rubber wheels and a petrol engine bolted onto a chassis of steel. Depending on your price bracket and experience, there are vehicles out there that can conquer mountains and others than can do 0-60 miles per hour (0-95.5 kilometres per hour) faster than some real-life cars. Or there are still some basic units available for when you just want to chase a cat or younger sibling around the garden. Once you've decided what you want, it's easy to get!

Shock absorbers

These VVC/HD damper units are thick, oil-filled, coilover shock shafts designed for maximum crash resistance and ride height adjustment

DOS & DON'TS

Our quick guide on the best way
to behave with your new RC car



Consult your options

Consider your budget, skill and preferences. The last thing you want is an expensive gadget gathering dust next to the Nerf Gun you used that one time.

Be wary of your surroundings

Solid advice: petrol-powered is designed for the great outdoors, while electric vehicles often thrive in the comfort of a living room.

Learn how to maintain it

Regardless of which power inlet you go for, always learn how to properly maintain your vehicle to avoid expensive and potentially painful disasters.



Run over your pets

Word of warning: pets hold grudges. The last thing you want is to find your Labrador taking revenge on the chew-toy-esque tyres.

Use petrol cars indoors

Due to increased speed – combined with the fumes and engine noise – you might want to take these outside and away from neighbours.

Hit it into walls

RC vehicles aren't indestructible. If you aren't careful with yours, one haphazard joyride can quickly turn into an expensive disaster.





£760 | \$1,085
hpiracing.co.uk

BAJA 5B 2.0 with D-Box 2

The Baja 5B is one of the biggest, most powerful and versatile petrol-powered RC buggies on the market. It's sleek, killer to drive and, oh, so awesome.

Roar of the engine

Powering this beastly machine is a 23cc two-stroke engine that lets the Baja 5B buggy hit speeds over 30mph across even the toughest terrain

The burning heart

At the core of it all, there's a 700cc fuel tank that lets you drive for up to 45 minutes before needing to refuel

Small but powerful

While it doesn't last for long off a full 40-minute charge, it's a nippy little thing and there's also an upgrade pack available for more gears

Master of terrain

Featuring an Adjustable Stability Control System, this buggy can have its four-wheel drive sensitivity altered to master everything from drift races to slippery surfaces

£35 | \$55
hpiracing.co.uk

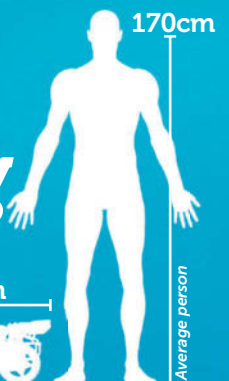
BAJA Q32

In contrast to the giant Baja 5B, the Q32 is a 1/32 scale model of the 5B 2.0 at just 109mm long. However, it's size also makes it nimble and lots of fun to race across tabletops.

How big?

81.7cm

BAJA 5B 2.0



Average person



THE BEST FOR... LAND TRAXXAS RUSTLER XL-5

If you've got the need for speed then nothing really comes close to the Traxxas Rustler. Thanks to the Titan 12-Turn motor, the Rustler can hit a top speed of 35mph, and has the added bonus of being equipped with waterproof electronics – traversing

puddles, snow and mud causes no problems whatsoever. Eagle-eyed racers will notice the elongated build of the XL-5, which has been tweaked to perform better when you want to take things off-road.
£160 | £250 | traxxas.com



THE BEST FOR... AIR HOBBYZONE SPORT CUB S READY-TO-FLY HBZ4400

Learning to fly an RC aircraft isn't easy, but the HBZ4400 has been developed to make the learning process as seamless as possible. This replica also includes a four-channel control system, providing flyers with a working throttle, rudder, ailerons and elevator. Plus, once you get quite handy with the controls, you can attempt a trick or two to show off to your friends. Let us know if you can master a barrel roll.

£135 | \$160
horizonhobby.co.uk

BEST OF THE REST

The 15 RC vehicles that you need to look out for!



LAND
Traxxas Rustler XL-5
£159 | \$250
Range: 10 minutes
Dimensions: 44.5cm x 17.7cm



LAND
Red Cat Racing Tornado EPX Pro
£333 | \$260
Range: 10 minutes
Dimensions: 40cm x 16cm



LAND
Exceed RC Mad Pulse Brushless Drift Car
£60 | \$100
Range: 20 minutes
Dimensions: 24cm x 7.5cm



LAND
2015 Ford Mustang V100-S
£179 | \$300
Range: 15 minutes
Dimensions: 37.1cm x 11.2cm



LAND
HPI Racing Baja 5B
£749 | \$900
Range: 45 minutes
Dimensions: 81.7cm x 25.5cm



AIR
HobbyZone Sport Cub S
£135 | \$130
Range: 8 minutes
Dimensions: 41cm x 12cm



AIR
Blade 360 CFX
£330 | \$500
Range: 6 minutes
Dimensions: 67cm x 21cm

THE FASTEST RC FOR LAND, AIR AND SEA

AIR Turbine-powered
airplane created by
Niels Herbrich
World Record

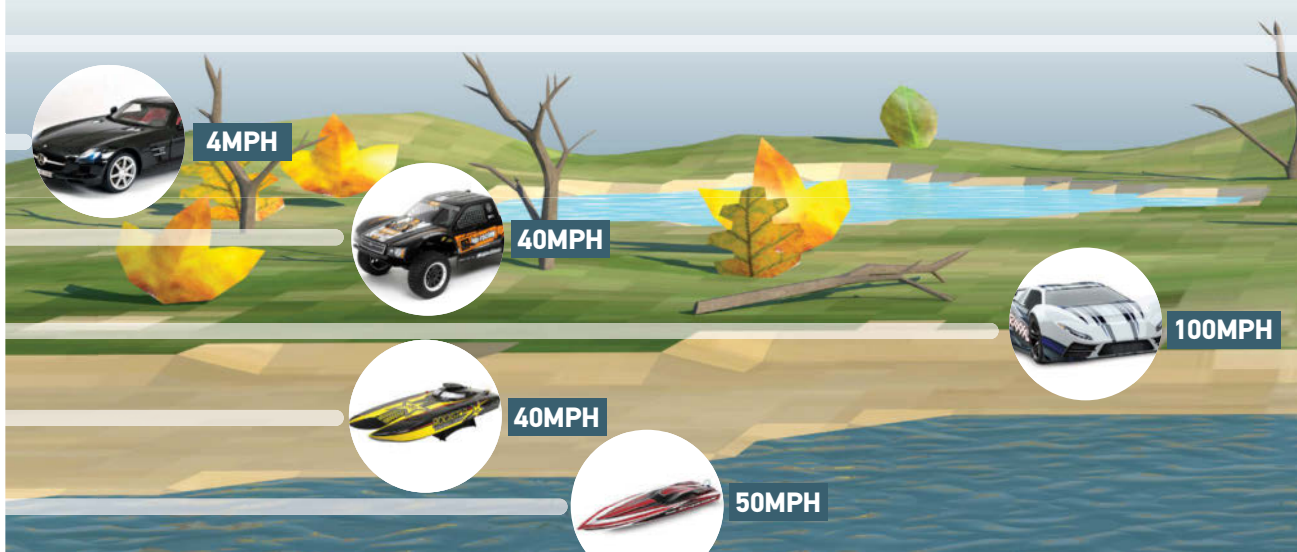
LAND Silverlit Mercedes-Benz SLS AMG
£88.48 | \$99.95
Range: 90 minutes

LAND HPI Racing RTR Baja 5SC
£979 | \$1,279.98
Range: 45 minutes

LAND Traxxas XO-1
£599 | \$699.99
Range: 20 minutes

SEA Pro Boat Rockstar Gas-Powered Catamaran
£799.99 | \$999.99
Range: 20 minutes

SEA Traxxas Spartan
£423 | \$499.95
Range: 10 minutes





THE BEST FOR... SEA PRO BOAT IMPULSE 17

So the Pro Boat Impulse isn't going to take you on a nice cruise around the Caribbean, but it'll certainly cater for your boating fix on the local pond. The 380-size motor provides both precision steering and high torque to keep speeds surprisingly fast. There's also the added bonus of an ABS hull to help provide durability, while a breakaway rudder system can prevent any internal damage occurring if you run ashore.

£97 | \$120

horizonhobby.co.uk



AIR

**i-Heli
T40C**

£130 | \$150

Range: 9 minutes

Dimensions:

81cm x 31cm



AIR

**ParkZone
Ember 2**

£150 | \$100

Range: 10 minutes

Dimensions:

33.5cm x 12.7cm



AIR

**Flyzone Tidewater EP Aquacraft Miss Seattle
Seaplane**

£300 | \$260

Range: 11 minutes

Dimensions:

91.5cm x 21cm



SEA

U-16 Hydroplane

£135 | \$182

Range: 6 minutes

Dimensions:

45.8cm x 10.2cm



SEA

**Pro Boat
Recoil**

£300 | \$170

Range: 10 minutes

Dimensions:

43.2cm x 10.2cm



SEA

**Radio
Ranger**

£90 | \$100

Range: 20 minutes

Dimensions:

86cm x 7cm



SEA

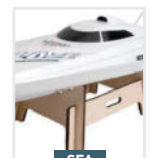
**Trailblazer Ultra High
Speed RC Boat**

£800 | \$710

Range: 20 minutes

Dimensions:

130cm x 26cm



SEA

**RipMax
X-Blaze EP**

£250 | \$260

Range: 15 minutes

Dimensions:

71cm x 18.5cm



439MPH

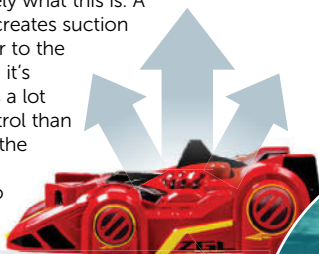
THERE IS SOME EXPERIENCE NECESSARY

If you were learning to drive a human-sized vehicle for the first time, you wouldn't rush straight into the driver's seat; you'd probably want to take a few lessons first. The same goes for remote-controlled vehicles. Battery-powered RC cars are best for beginners, letting you get the basics down with little maintenance or cost required to find the fun times. Petrol-powered, on the other hand, demands a lot more upfront cash and skill to run, not to mention patience as you get your head around the increased engine refuelling and tinkering for best results. Nevertheless, the payoff is a faster and more versatile experience – great for petrolheads.

LOOK! RCs CAN CLIMB UP YOUR WALLS NOW

Air Hogs Zero Gravity Laser Racer
£30 | \$40 | airhogs.com

Not all great RC cars have to be supersized behemoths. At just 5.8 inches long, the Zero Gravity Laser Racer is a tiny car that's designed to defy gravity and take RC racing across your walls and ceiling. If this sounds like a way for your kids to replace dirtying your white walls with dirty wheels instead of crayons, then you're right – that's absolutely what this is. A powerful fan creates suction to hold the car to the wall and while it's impressive, it's a lot harder to control than it seems. Still, the novelty does take a while to wear off.



Keep flipping the switch

So the fan can properly regulate power, a switch must be flipped to indicate the surface that you are trying to traverse

Stay on target

Specially designed skirting around the perimeter of the vehicle ensures that the vacuum seal is kept intact

Wall-climbing technology

Air Hogs developed a special system whereby a powerful fan acts like a mini vacuum, generating suction to cling to surfaces

RC DRONES IN DISGUISE

Not content with tackling just land and air, Parrot has now taken to the sea as well, presumably in its bid to make the coolest drones imaginable across all terrain. The Minidrone Hydrofoil consists of two components: a main non-powered body and a Parrot aerial Minidrone. Connect the Minidrone to the Hydrofoil deck via a hinged mount and you'll notice that instead of flying straight into the air as it usually would, it pivots forwards, creating a miniature fan-powered boat. An iOS-controlled, fan-powered boat that's capable of hitting a maximum speed of six miles per hour and precision turning without capsizing. It's truly impressive.

Parrot Minidrone Hydrofoil
£140 | \$180
parrot.com



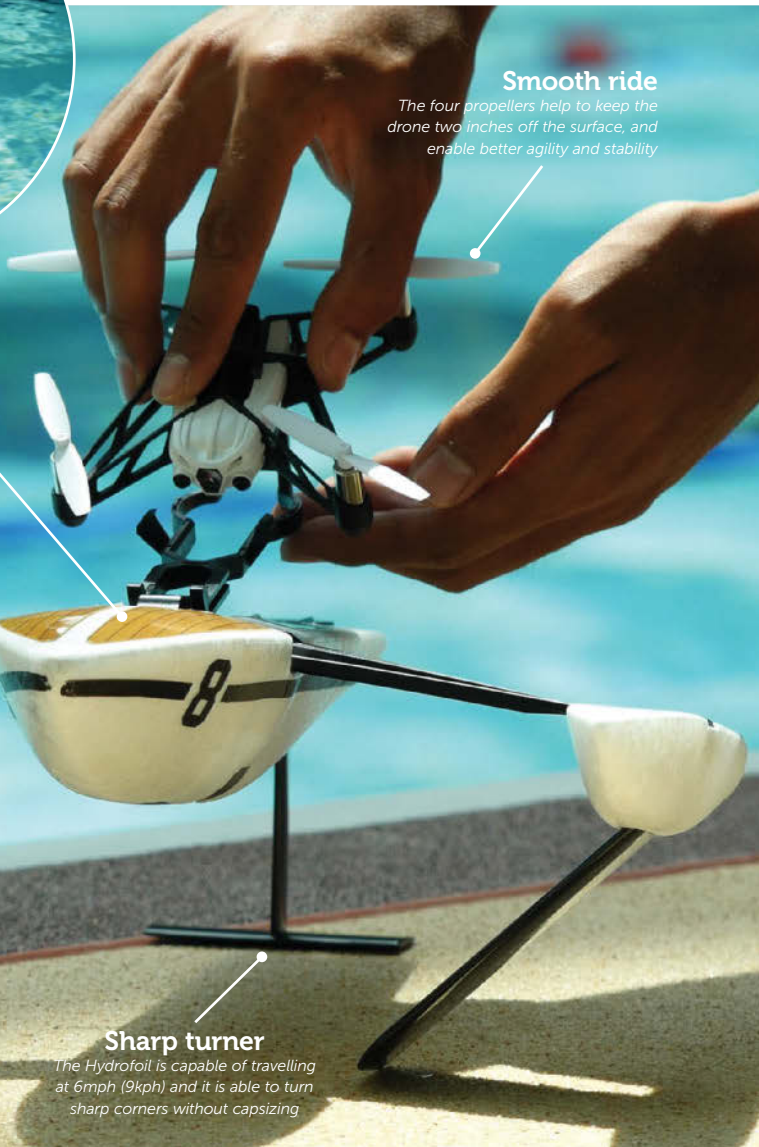
The Hydrofoil sits two inches above the water

Up and away!

The Hydrofoil can be separated from its nautical base in order to fly on its own

Smooth ride

The four propellers help to keep the drone two inches off the surface, and enable better agility and stability



Sharp turner

The Hydrofoil is capable of travelling at 6mph (9kph) and it is able to turn sharp corners without capsizing

RECORD BREAKERS

Fastest RC Ever Radio-Controlled Bullet

This is insane. This purpose built RC car can rocket off at over 200 miles per hour, that's faster than most cars.

Speed: 202.02 MPH – it has a higher top speed than a Porsche 911

RC vehicles go nuclear

Air Hogs does it again with the Skywinder, a stunt rocket that uses counter-rotating blades to stay airborne and let the user pull off easy indoor tricks.

Air Hogs Skywinder
£20 | \$30
airhogs.com

RECORD BREAKERS

Smallest RC Ever
Mercedes Benz Smart car
Developed in Japan back in 2002, a 1/90 perfect scale of a Mercedes Benz Smart car was able to drive for 15 minutes before needing to be recharged.
Size: 25 millimetres – the length of a 50p coin.

WHACKY RACERS

Discover the weird and wonderful alternatives to boring four-wheelers

On the offensive with Combat Creatures Attacknid

Built to resemble a creepy robotic spider, this six-legged RC vehicle will blast your foes with foam bullets on your command.

Combat Creature
£70 | \$100
CombatCreatures.com

The future of Lego is remote-controlled

Lego Mindstorms EV3 is the future of building incredible stuff with little blocks and a little imagination. These sets let you build and program functional RC robots.

Lego Mindstorm
£300 | \$350 | Lego.com

Alien-inspired night flying

The UFO ball copter will let you tackle the night sky with its built-in LED light system, destined to contact extraterrestrials and scare your friends.

UFO Copter
£35 | \$45 | ThinkGeek.com

THIS IS THE DROID YOU'RE LOOKING FOR...

We go behind the scenes on Star Wars' cutest new star

Unless you've been living under a rock somewhere, you can't have failed to notice the massive influx of new *Star Wars*-themed toys as *The Force Awakens* edges ever closer to the cinema. Amid the massive influx of gadgetry, however, one toy has stood out more than any other: Sphero's awesome remote-controlled BB-8 droid.

Ever since she first rolled onto the stage at the Star Wars Celebration event in Anaheim, BB-8 has captured the imagination of those both struck by her lovable disposition and in awe at the practical effects, as up until then pretty much everyone had assumed it to be a result of CGI effects. Nope, it's the real deal and now you can buy your very own.

Controllable via your smartphone (once you have downloaded the free app), what looks like R2-D2's cute cousin is sure to be the must-have accessory this Christmas. Here we lay bare exactly what it is that makes the Force so strong in this one.

£130 | \$150
sphero.com

BB-8 App-Enabled Droid by Sphero

A smartphone-controlled model of what is already The Force Awakens' breakout star, you will have a lot of fun zooming around with this lovable droid.



"What looks like R2-D2's cute cousin is sure to be a must-have this Christmas"

INSIDE BB-8: WHAT MAKES HER TICK

The tech behind the lovable droid

Magnets

Two magnets at the top hold BB-8's head in place, enabling it to move as BB-8 rolls along

Head screwed on

The stem attached to the magnets in BB-8's head helps keep her upright, preventing her from tipping over

Gyroscope

The gyroscope determines which way is down, with two wheels moving the internal mechanism to keep it the right side up

All systems go

The main systems board contains much of what makes BB-8 tick: like the Bluetooth chip, gyroscope and battery charger

Outer shell

The inside of BB-8 is protected by a hard polycarbonate shell, which makes it a tough little droid to break

Batteries

The batteries are connected to an inductive charging system that effectively lets BB-8 recharge wirelessly when placed on the charging base

Charging plate

Pop BB-8 into the platform and the inductive charging system will have her full of juice in no time

Charging platform

Plugged in via USB, it will give your droid an hour of play when fully charged

Take your droid out and about and watch as she explores across the terrain



5 REASONS WHY YOU WILL LOVE YOUR BB-8

GETTING STARTED

01 Download the iOS app

First, download the Sphero BB-8 app from the iTunes App Store because you will need this to control BB-8. Make sure your Bluetooth is turned on.

02 Charge her up

Place BB-8 on the dock that comes with it and charge it up by connecting the dock to a charging source via the included USB cable.

03 Begin your story

With the iOS app downloaded and BB-8 charged, you are ready to start playing around and discovering exactly what it has to offer. May the Force be with you!

Slide to steer

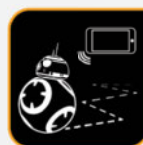
Gently slide your finger across the driving pad to guide BB-8 in different directions

Point and hold

If you hold your finger down for more than a few seconds, BB-8 will automatically set off

Add some expression

As you drive, enter the Droid Commander menu to add some expressions to the BB-8 droid



01

ROLLING IS COOL

From the main menu, tap the Drive option. Use the circular navigation panel on the left to move around and the BB-8 icon on the right of the screen to swivel.



"As she bumps into objects, she will turn and move in different directions"



02 SEND HER ON PATROL

Enter Patrol mode

From the main menu, tap the Patrol option and you will be taken to the Patrol mode dashboard. Here you will be able to view the distance patrolled and monitor its balance

Start patrolling

Press play (the yellow icon in the middle of the screen) and BB-8 will start patrolling. As she bumps into objects, she will turn and move in different directions accordingly

Stop patrolling

As it bumps into things, it will map the environment and learn to avoid these obstacles in future. To halt BB-8, press the stop icon in the middle of the screen



Who needs real pets when you have your own BB-8?



03 LISTENS TO YOUR VOICE

Voice control

First, go to Settings and make sure that Voice Recognition is turned on. From there, a tutorial will immediately start up, telling you what to do.

Issue voice commands

In Drive mode, you will be able to issue certain voice commands. For instance, saying "It's a trap" will make BB-8 frantically move.



"Hey BB-8... it's a trap!"

Saying this will cause BB-8 to enter into a panic and roll away in evasion

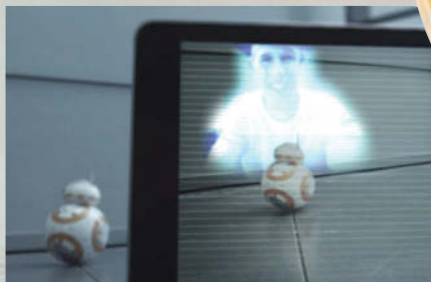


04 HOLOGRAPHIC VIDEO MESSAGING



01 Get recording

Tap Messages on the main options screen. Press the circular recording icon in the bottom-right corner, line up your face with the outline and press the red recording icon.



02 Displaying the message

After you have recorded a message, it should be available in Messages. Move your phone closer to BB-8 and a hologram will appear on the screen above the droid,



05 SHE WILL LEARN WITH YOU

While BB-8 may work autonomously, it's how it listens and learns commands that's most intriguing. On setup, users have to say a series of commands, with the principal being that once BB-8 recognises your voice, it'll perform tasks without the need for you to have your smartphone to hand. Its adaptive personality will then respond to your commands in different ways, with both its actions and attitude evolving the more you interact with it.



Smash the Kessel Run all over again!

Powered by four propellers, take control of the fastest heap of junk in the galaxy with this remote-controlled drone.

**Star Wars Millennium Falcon
Radio Control Flying Drone**
£99.99 | \$109.99
smythstoy.com

Steer like Solo

You can spin and flip in mid-air, and pretend you're being chased by TIE fighters...

Smooth flight

There are four propellers to aid the stability when the Falcon's in flight

CLASSIC STAR WARS TOYS FROM YESTERYEAR

1977

Vintage Star Wars Talking Alarm Clock

This talking alarm clock featuring C-3PO and R2-D2 is a great example of *Star Wars* merchandise.



1978

Han Solo Blaster

For the bad-boy that didn't want a lightsaber, this pistol had a 'secret' button so it produced a two-speed laser sound. Cutting edge in its day.



1979

Kenner Give-A-Show Projector

This came with 112 colour slides and 16 strips depicting various scenes from *A New Hope*.



1980

Kenner's The Force Lightsaber

The successor to the poor-quality inflatable model, the sound effects helped make this the first lightsaber you were glad to own.



1981

Kenner Slave 1

Boba Fett's personal ship, this classic Kenner toy gave as much joy to kids of the Eighties as it put terror in the bounties' hearts.





R2-D2 in your living room

With over 1,000 action combinations possible, finally you can bring the saga's diminutive hero to life like never before!
Star Wars Interactive R2-D2 Robotic Droid
 £139.99 | \$239.99
 smythstoys.com

Hear the heir to Vader speak!

This deluxe version of *The Force Awakens*' newest villain has 31 points of articulation, is poseable and repeats a number of signature phrases.
Kylo Ren Animatronic Interactive Figure
 £99.99 | \$99.99
 smythstoys.com



Wookiees have all the fun

Fight like Chewbacca himself with this Nerf shooter based on his signature weapon. It can fire up to 20 metres.
Nerf Episode VII Chewbacca Bowcaster
 £24.99 | \$24.99
 hasbro.com



You too can talk like Adam Driver

Not only can you don his mask, you can even sound like him with this film-accurate electronic voice changer.
Black Series Kylo Ren Voice Changer Helmet
 £79.99 | \$79.85
 smythstoys.com

1983

Darth Vader Speakerphone
 In the dark times, the Lord of the Sith himself took care of your phone calls. Well, he took those calls, anyway.



1999

Jar Jar Sticky Tongue Toy
 These would inevitably end up covered in dirt and hair, but for some reason it seemed like everyone owned one.



2008

Death Star Lego
 Made of an incredible 3,803 individual pieces, this is one of the most intricate *Star Wars* Lego models ever produced.



2009

Force Trainer
 Show off your telekinetic skills by making a ball float. It works using a headset that measures concentration and activates a fan.



2011

Ultimate FX Darth Vader Lightsaber
 A modern take on the classic, this 'saber included a motion sensor so it crackled when you hit something.



8 ROBOTS

THAT COULD BE OBEYING YOUR COMMAND RIGHT NOW

Choose the perfect robot to give you that feeling of power

When Czech writer Karel Capek first used the word 'robot' in his science fiction play *R.U.R.*, he had no idea that one day almost every person on the planet would be familiar with his then fictional term. Less than 100 years later, robotics are set to become the next trillion-pound industry – it's a matter of when rather than if.

As advancements in technology made robots smaller and cheaper, robots quickly found their way into our shops. Today, a colossal variety of different robots are available to buy, from small programmable toys to monstrous humanoid suits of armour. Entertainment robots are becoming increasingly popular, many of which make use of a piece of technology we all seem to have these days: a smartphone. These toys range from small racing cars and helicopters to robotic puppies – soon to be the top of every child's Christmas wish list.

If you're looking for something more practical or if you're feeling lazy, there is

a whole host of robots that can be useful around the home, without you having to lift a finger. Home security robots are also just starting to come onto the market, such as the RoboteX Avatar III that patrols your house on its own and streams HD video directly to your smartphone. Not exactly *RoboCop*, but this robot offers a level of security that could once only be seen in films.

Helping the elderly is another major field of robotics; as our population continues to age, these robots could become a vital part of the everyday lives of older generations. Personal robots really come into their own in this regard, particularly telepresence robots that move around the house and interact with people at eye level, reminding them to take their medication or even just providing a friendly face to talk to.

So which of these robots is for you? That's hard to say, so we've put together a list of our eight favourite robots for you to choose from, ranging from entertainment robots that

everyone can afford to the pinnacle of today's robotic engineering, which would require you to re-mortgage your house and possibly your family's homes too!

The robotic revolution we are currently experiencing is set to mirror the evolution of computers and smartphones. The earliest PCs occupied the equivalent size of a small house and the first mobile phones were heavier than your average brick. However, their technology soon became miniaturised and modern laptops and smartphones have become the norm. Robotics also started off big and industrial, and its future may well lie in tiny robots that follow you everywhere you go, relying on built-in swarm intelligence to understand the world around them, or even smaller robots that can perform very complex surgeries. It's easy to speculate, but what we know for sure is that robots are here to stay and they're coming to your homes and places of work in the very near future. This may not be as scary as it first sounds.

01

£380 | \$600

Country of origin: America

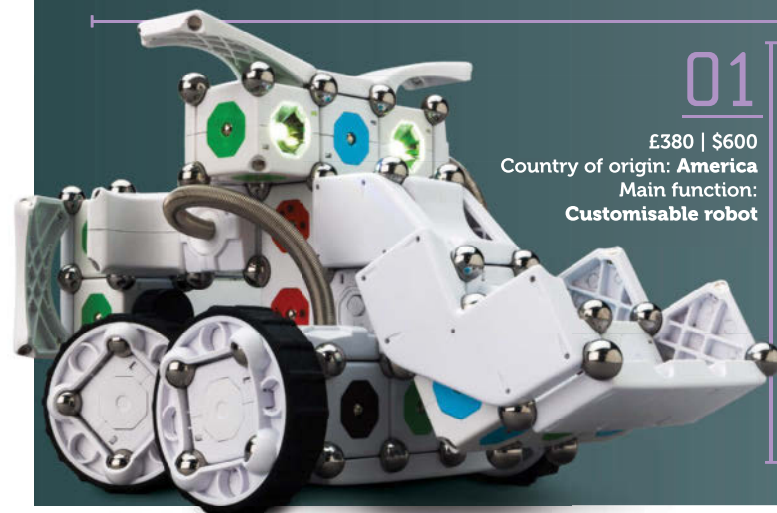
Main function:

Customisable robot

MOSS EXOFABULATRONIXX 5200

This robot is fully customisable, letting you unlock your inner engineer and build your very own design

It may not be the best-looking robot on this list, but it is one of the best for experimenting. The clever design relies on a block-based construction system. Each block is a different part of the robot and can provide a different function, meaning the more you experiment with the structure the more you can develop. It's designed to be used by children and adults alike, so there is no complex programming required when you alter the robot's structure – instead, it's very much plug-and-play. The website even gives you some Robot Recipes to try, including: the Crazy Nocturnal Backpacker, the Moustached Bumblebatic and (insert a scary voice here) the *Fan of Danger*.



02

ROBOTHESPIAN

£39,500 | \$60,900

Country of origin: **United Kingdom**Main function: **Education****For museums or education, the RoboThespian is an excellent public speaker**

The RoboThespian has been under continuous development since 2005. It is primarily a communication robot to be used in education, which is clearly evident in its design and features. Its ability to gesture and convey emotion is particularly impressive, as are its two eyes made of LCD screens that change colour in relation to the robot's movement. Be warned, though, that the life-like images of the eyes can be eerily human at times! The actuators that make up its limbs are driven by air pressure that creates very delicate and precise movement of the hands, helping it to communicate more effectively. It can be controlled remotely from any browser, enabling you to keep track of the robot so you can make sure it's providing the best public service.

03

PEPPER

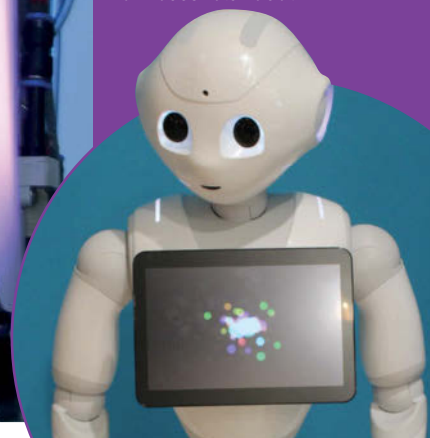
£1,150 | \$1,600

Country of origin: **Japan**

Main function:

Household robot**Pepper can read your emotions**

Pepper uses its emotional engine and a cloud-based artificial intelligence system to analyse human gestures, voice tones and expressions, enabling it to read our emotions more effectively than most other robots. Pepper doesn't take up much space (standing at only 58cm tall), but it certainly doesn't lack intelligence as it speaks 19 different languages fluently. The first 1,000 units of this humanoid sold within a minute of going on sale – this shows that there is some serious demand for this type of household robot.



04

i-QUE

£65 | \$100

Country of origin: **China**

Main function: **Entertainment**

What do you get when you mix the smarts of your average human with the technology of a Portal turret?

While it may look rather basic when it comes to some of the humanoid robots covered here, the i-Que shouldn't be dismissed. Once paired with your smartphone, the i-Que comes into a world of its own, taking on the form of a well-spoken and highly intelligent robot. It can provide answers to the most awkward of questions and will normally beat you in an array of games. Thanks to the six points of articulation, the i-Que is capable of both walking and even dancing when it hears music. Movements are stiff, as you'd expect, but it's a credible feature to offer for a robot that's competitively priced. When not set to walk or dance, the i-Que will respond to your command by glowing certain colours. Glowing red indicates it's listening to you, while a sepia tone means that your command has been understood. The i-Que sums up everything that a light-hearted robot should be: it's fun, interactive and kids will undoubtedly love playing with it.

Move with ease

The joints of the i-Que have been cleverly designed to enable him to walk, to some degree. The i-Que has a total of six points of articulation so his movements are pretty varied

Is he listening?

When asking a question to i-Que, keep a close eye on the LED lights that emanate from his face. If a red light is glowing then you'll find the i-Que is currently listening to you

Make him groove

By toggling the switch at the back of i-Que you can switch him to Dance Mode. Now just start up a track and watch i-Que start strutting his stuff

AFFORDABLE ROBOTICS

Buy your very own R2-D2-like droid to have by your side

You may think personal robots are something that only the excessively rich can afford and though this may once have been the case, times have changed. Today you can pick up a fairly nifty robot for under £50, including brilliantly educational, build-your-own robot kits that teach children about programming, engineering and computing. The vast developments that have been made in computing are relevant to most of robotics, and have enabled this technology to become cheaper as it has become more widely available and increasingly mass produced. Key components of robotics, such as vision sensors and gripping systems, have also advanced to such an extent that robots have become smarter, more highly networked and more able to perform a wider range of applications than ever before. Due to this, prices have fallen and performance has increased exponentially. All in all, this is brilliant for the consumer as robots that were recently considered cutting edge are now much more affordable.

Facial expressions

Program the eyes to convey emotion, from red or purple to ghostly green

Simple to use

If you're not a programmer, don't worry – Rapiro has a pre-programmed controller board

You have a new cleaner

It can do a host of different functions, from dancing to sweeping your desk

05

RAPIRO

A cute, affordable and easy-to-assemble robot

£350 | \$440

Country of origin: **Japan**

Main function: **Entertainment**

It may be small, but the Rapiro is capable of acting big. It relies on a Raspberry Pi for its power and actually takes its name from Raspberry Pi Robot. Its ability to be upgraded and changed is Rapiro's main strength. The more you put into it, the more you get out – plus, you can freely download the files to 3D-print your own. The possibility to learn about robotics is also a huge selling point. You do have to buy the Raspberry Pi separately, but it's inexpensive so don't hold it against this cute little droid.

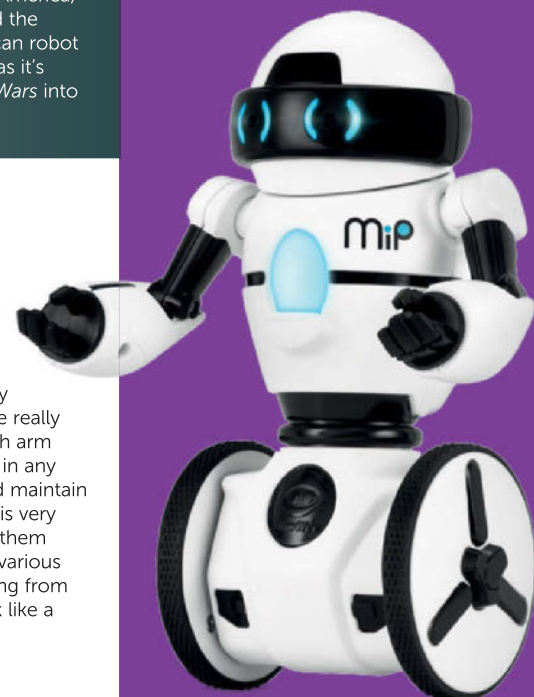
08 WOWWEE MiP

£60 | \$100
Country of origin: **China**
Main function: **Entertainment**

This is a loveable robot buddy that can outdance anyone

The MiP sits on Segway-like parallel wheels, which it uses to furiously dart across flat surfaces. Lots of technology is packed into this little droid, including a head-mounted microphone, LED eyes, IR transmitters and a speaker on its back. It can be directed using hand gestures to move or dance, which it does with enviable balance considering it's only on two parallel wheels. This makes for hours of fun, especially when its immersive personality starts to interact with you as you play with it – you'll begin to think it's real.

WowWee strongly recommends you download the accompanying free app that is available for iOS and Android. This app will enable you to access MiP's extra features and makes it even easier to control: simply swipe forward with your left thumb to move forwards while using your right thumb to steer. You can also perform a few extra dance moves, just to impress the DJ a bit more, but this is a minor addition compared to the ability to control MiP's movements directly.



Targeting display

Within the cockpit is an impressive heads-up display that not only shows where you're going, but also has an advanced targeting system

Safer than armour

The large chest cavity is completely bulletproof and is designed to protect the pilot should the robot fall

It can't run very fast

Kuratas has four wheel-tipped legs that enable it to travel at a top speed of 9.6 kmh

Diesel-powered hydraulics

The hydraulics in the arms and legs are powered by diesel. They move quickly and smoothly to move the robot's enormous frame

Fully-functioning hand

With the help of a specially designed glove, the robot's hand has a full range of motion and can copy exactly what the pilot's hand does

06 KURATAS £659,000 | \$1,016,200

Country of origin: **Japan** Main function: **Armoured suit**

The closest you can get to an Iron Man suit: this Japanese super-robot provides you with your own weaponised suit

Kogoro Kurata, a Japanese engineer, always dreamed of seeing the giant robots he loved during his childhood come to life. With the help of another engineer, he built the world's first human-piloted robot: Kuratas. Standing at a towering four metres tall and weighing 4,500 kilograms, the Kuratas is truly impressive to behold. Unveiled in 2012, it has a host of superb technology, including a fantastic heads-up display in the cockpit and

advanced weaponry. It's amazing to think that a fully-fledged version of this robot is already available to buy and shows just how far robotics has come in the last 20 years. Kuratas is set to fight a similar creation from America, the Megabot, to see who has created the toughest mechanoid yet. The American robot is tough, but once you've seen Kuratas it's hard to bet against it. It takes *Robot Wars* into a whole other steroid-packed world.

07 HRP-4

The HRP-4 is literally an all-singing, all-dancing robot

£200,000 | \$300,000
Country of origin: **Japan**
Main function: **Human assistance**

The HRP-4 is one of the most advanced humanoid robots ever created, which is also represented by its bank-breaking price tag. This robot was designed to work with humans and easily integrate into almost any working environment. The really impressive advancements are in its movement: each arm has seven degrees of freedom, enabling it to move in any direction it needs. It can also walk like a human and maintain its balance with ease. The robot's intelligence level is very high, enabling it to talk to humans and understand them while also being able to recognise and manipulate various objects. It can even identify where a sound is coming from and turn to face it! The HRP-4C is designed to look like a human and yes, it can also sing and dance.



Get ready for blast off and discover the fantastic range of rockets you can shoot skywards in no time...

BUILD YOUR OWN ROCKET

Come home safely
The Riptide has a 12-inch plastic parachute that, if cared for properly, should bring the rocket back gently to the ground for another flight

A new alphabet
Letters determine the power of the motor. The Riptide can handle B, C or D 18mm motors. Bs are the place to start as each letter down the alphabet doubles the power. So C equals twice the strength of B and so on

£26.99 | \$34.99
modelrockets.co.uk

Riptide Launch Set

No assembly needed, this Riptide set has a rugged, prebuilt and painted rocket that is perfect for all beginners. It also has both a launch pad and controller included.

Airplanes are so 20th century, but model rocketry is the 21st century space-age hobby for budding astronauts or grown up kids.

What's more, there's no easier start to the DIY space-age than a model rocket kit. A range of rockets are available to suit all sizes, shapes, preferences, abilities and budgets. The best start is an RTF or ready-to-fly rocket as you can go from shredding the gift wrap it comes in to setting off your first rocket in under an hour.

Prebuilt launch sets are economical and meant for the younger or more impatient imaginary astronauts. The lack of required gluing eliminates the waiting time and the pre-painted ones mean the dining table is safe both from paint splatter and your partner's anger. However, there are a lot more options out there for those of you who are master builders and fancy a challenge.

There are still a number of essential steps in order to get even an RTF rocket ready to fly. These rockets are designed to make your first launch an unqualified success, but for experienced engineers who want a bit more of a risk, there are a number of demanding models to challenge your scale modelling or science-

fiction fantasies, but the basic principles always remain the same.

Remember that model rockets are not fireworks, even though the smaller ones use the same black powder propellant that Guy Fawkes used. Done properly, a model rocket returns gently and safely to the ground, ready to be flown again and again.

All model rockets require motors for each flight and recovery wadding, as this is a special material that protects the parachute from the explosive ejection charge that kicks the parachute out and brings the rocket back home. Launch equipment, motors, recovery wadding, glue and finishing supplies always cost extra unless specified as part of the set.

Straight fins equals a straight flight

Tricky fin alignment is sorted for you in this set, as it is probably the most challenging part of any DIY rockets



HOW TO BUILD YOUR OWN ROCKET



01 Buy everything you need
Be sure all the parts are there; without the correct parts, things could go drastically wrong. Motors and recovery wadding are also needed to fly the Riptide, but they aren't included in the box.



02 Attach the parachute
Take care — this bit is high on the list of possible mistakes that could crash land your new pride and joy. Follow these instructions carefully and you'll be able to enjoy more than one launch!



03 Tuck the parachute in
Put at least three sheets of recovery wadding in, push this down then insert the carefully folded parachute. Make sure the nose cone is snug, but not stuck. Beware of any errant bits of parachute or shock cord.



04 Load your motor
Use a B motor for your first flight. Lock the retainer to prevent the motor flying out the back when your rocket nose dives. Insert the igniter and nozzle plug only once you have reached your launch area.



05 Prepare ground equipment
The launch pad needs a bit of assembly and the controller should have a *new* PP3 battery (Duracells do NOT work). Weak batteries are the number one cause of launch failure, so invest in quality ones.



06 Countdown and blast off
Take your rocket and ground equipment to a suitable spot — a football pitch is about the right size. Attach the clips to the igniter wires, stand well back, countdown and blast off!



LEGAL HIGH!

It's stronger than it looks

It may be cardboard, but it's very good cardboard. The cylindrical shape makes it very strong in compression, which is the force it experiences during flight. Cardboard toilet rolls aren't quite as resilient

Tear a hole in the air

The sleek, low-weight plastic nose atop the payload bay is key to achieving good altitude and a straight flight

Safe journey home

Protected from the hot gases in the motor's ejection charge with copious wadding, the 15-inch plastic parachute is capable of bringing your new rocket gently home. If you have an expensive payload (there's a maximum load of 50g) then you might want to invest in a larger nylon parachute

Flight stability

The fins must be securely attached and precisely aligned on both stages to have a straight flight and reach the maximum altitude. A fin-alignment tool is available for this perfectionists among you

Aerodynamic build

To keep it all pointing in the right direction until the fins gain aerodynamic authority (about 37mph/60kph) these small tubes guide the rocket up the launch rod. Small they may be, but also essential

The beating heart

The booster section provides a home for the big motor with the gubbins to get the show on the road and light the top stage. It would be best to go for a B6, C6 or D9 motor with a -0 suffix. This means it has no parachute ejection charge



£10.99 | \$15.99
modelrockets.co.uk

Loadstar II

Loadstar II is a two-stage payload-carrying rocket that requires accurate assembly, your own paint scheme and an understanding of flight dynamics, along with extra elements.



PROWLER MID-POWER ROCKET SET

Mid-power rockets are much more like the real deal. They are big, make lots of noise, use propellant related to the Space Shuttle's Solid Rocket Boosters, fly higher and, as you'd expect, they are more expensive. They are a very bad choice for a first rocket!

The Prowler comes as a set that includes the heavy-duty launch pad and a so-so launch controller. Pro29 reloadable motors are available in the UK from Cesaroni Technology. They are bigger (29mm in diameter of course) and require a reusable casing. A special tool will be needed to adjust the ejection delay.

No paint required

While pink may not be your favourite colour, it is already done and dusted for you. It also makes finding the rocket in the weeds (or a tree) much easier

More power!

Cesaroni Technology Pro29 reloadable motors provide an element of economy in what are very expensive toys. You can reuse the casing, but that's only if your Prowler doesn't land in the top of a tall tree

Use epoxy glue

More power requires stronger sticky stuff. Epoxy glue makes for faster building too. After all, waiting for glue to dry is basically watching paint dry

£59.99 | £79.99
modelrockets.co.uk

**Prowler PSII
Launch Set**

No pets in the payload bay

No living payloads, but we don't expect you'd want to risk turning your pets into pâté anyway. The 40G lift off means you need a very resilient mini DV cam or model-rocket altimeter

BIGGER MOTORS GET MORE ALTITUDE

Motors come in several sizes and formulations. A step up from the Riptide's and Loadstar II's 18mm motors is the 24mm D motor from Estes. You can also fit Cesaroni Technology Pro24 motors for level E power; they cost more, but crickey do they fly high!

The rocket for those who think size matters

The Firebolt is a tall one, 927mm tall or over 36 inches in old money. This means a thicker 5.5mm launch rod is required. A simple mod of the Astron II pad can accommodate this, but a safer bet would be a bigger launch pad like the Estes E pad or a Klima Air Launcher

This one needs a big motor

More propellant means more go power. The 24mm motors needed for the Firebolt can have double or more power than smaller rockets. You definitely get what you pay for here

£16.99 | £26.99
modelrockets.co.uk

Firebolt

GROUND SUPPORT

For the best of take offs

Three-millimetre launch rod

Although this is included with the Astron II pad, they are prone to bending. Forget the rod and you'll spoil the launch! Bigger rockets can require the 5.5mm Maxi Rod or larger, as well as a bigger launch pad to boot. This is included in most launch sets.

£4.99 | £6.99
modelrockets.co.uk

Astron II Launch Pad

Estes' latest launch pad, the Astron II, has the stability to launch the vast majority of model rockets on its three-millimetre launch rod. However, bigger, heavier and more powerful rockets will require a bigger pad with a wider footprint. It's included in most launch sets.

£12.99 | £16.99
modelrockets.co.uk

Astron II Launch Controller

Model rockets use electrical ignition, no blue touch paper allowed! With five metres of cable between the box and the clips, this is safe and sufficient for launching motors up to D power.

£14.99 | £18.99
modelrockets.co.uk

STAY SAFE

Give yourself some space

Depending on the size of your motor, you need to be at least two to five metres away from your launch pad. Also, you need a clear and safe place to land; where this is depends on the size of the motor, the wind speed and its direction.

Heads up

Make sure every one around you in the launch area is paying attention – that's what a countdown is for! Rockets are meant to go straight up and away, but you still may need to be aware of what's going on in case something goes wrong.

Do your homework

You should know that your model is structurally sound and stable, that the motor is powerful enough, that the parachute ejection delay is correct and that the anticipated altitude is sensible for the surroundings.

Avoid bad weather

Never fly into clouds: there may be airplanes lurking there. Clouds impair your view of a plummeting rocket if the parachute deployment goes wrong. If there's an electrical storm, be sensible and go home.

Don't get in over your head

It is called rocket science for a reason. Know what you are doing and walk before you run. Get advice from experienced rocket hobbyists before you get too ambitious and start with something simple to build confidence.

Bodgers beware

Sure, you can build a rocket out of toilet paper rolls, match heads and sticky tape, but do you really want to eat hospital food for weeks with your hands wrapped in casts? Use quality components that are made for the job and are reliable.



N-Strike Jolt Blaster
Range: 40ft / No. darts: 2
£4.50 / \$5



Nerf Reactor
Range: 25ft / No. balls: 4
£6.50 / \$10



N-Strike Elite Firestrike Blaster
Range: 75ft / No. darts: 3
£7.50 / \$10



Zombie Strike Ricochet Blaster
Range: 30ft / No. discs: 2
£9 / \$8



N-Strike Elite Triad Ex-3 Blaster
Range: 75ft / No. darts: 3
£10 / \$7



Action Blasters Big Bad Bow
Range: 40ft / No. darts: 3
£13 / \$20



N-Strike Strongarm Blaster
Range: 75ft / No. darts: 6
£13 / \$13



Zombie Strike Ripshot Blaster
Range: 40ft / No. discs: 3
£15 / \$10



**Zombie Strike Zed Squad
Zombie Clear Shot Blaster**
Range: 30ft / No. darts: 4
£14 / \$15



**Zombie Strike BioSquad Zombie
Eraser ZR-100 Blaster 2015**
Range: 38ft / No. darts: 2
£14 / \$20



Vortex Diatron Blaster
Range: 60 feet / No. discs: 2
£16 / \$20



**Zombie Strike
Crossfire Bow Toy**
Range: 50ft / No. darts: 4
£16 / \$20



Vortex Proton Blaster
Range: 60ft / No. discs: 3
£17 / \$9.99



**Zombie Strike
Flipfury Blaster**
Range: 80ft / No. darts: 12
£18 / \$20



**N-Strike Thunderblast
Launcher**
Range: 60ft / No. darts: 2
£18 / \$25



**N-Strike Elite
Rough Cut 2X4 Blaster**
Range: 75ft / No. darts: 8
£18 / \$20



**N-Strike Barricade RV-10
Blaster**
Range: 35ft / No. darts: 20
£20 / \$15



**Zombie Strike
Fusefire Blaster**
Range: 60ft / No. discs: 5
£20 / \$20



**N-Strike Elite
Stryfe Blaster**
Range: 75ft / No. darts: 6
£20 / \$20



**N-Strike Elite Mega
CycloneShock Blaster**
Range: 90ft / No. darts: 6
£20 / \$20



N-Strike Elite Crossbolt Blaster
Range: 90ft / No. darts: 12
£20 / \$24.99



N-Strike Sharpfire Blaster
Range: 60ft / No. darts: 6
£22 / \$14.99



**Zombie Strike BioSquad Zombie
Abolisher ZR-800 Blaster**
Range: 20ft / No. darts: 8
£23 / \$30



Vortex Vigilon Blaster
Range: 50ft / No. discs: 5
£25 / \$16



**N-Strike Elite Rapidstrike
CS-18 Blaster**
Range: 75ft / No. discs: 18
£25 / \$40



**N-Strike Mega Series
RotoFury Blaster**
Range: 90ft / No. darts: 10
£28 / \$35



**Zombie Strike
SlingFire Blaster**
Range: 60ft / No. darts: 6
£30 / \$25



Vortex Praxis
Range: 60ft / No. discs: 10
£30 / \$25



Vortex Revonix360 Blaster
Range: 65ft / No. discs: 30
£30 / \$40



Mega ThunderBow Blaster
Range: 100ft / No. darts: 5
£30 / \$40



**Zombie Strike Zed Squad
Longshot CS-12 Blaster**
Range: 50ft / No. darts: 12
£30 / \$35



N-Strike Elite Centurion Blaster
Range: 100ft / No. darts: 6
£30 / \$50



**Doomlands 2169
Lawbringer Blaster**
Range: 27ft / No. darts: 12
£31 / \$35



**N-Strike Modulus
ECS-10 Blaster**
Range: 90ft / No. darts: 10
£43 / \$50



N-Strike Elite Hail-Fire
Range: 75ft / No. darts: 144
£50 / \$40



**Zombie Strike
DoubleStrike Blaster**
Range: 60ft / No. darts: 2
£10 / \$10



N-Strike Reflex IX-1 Blaster
Range: 35ft / No. darts: 3
£10 / \$6



**N-Strike Mega
BigShock Blaster**
Range: 50ft / No. darts: 2
£10 / \$8



**N-Strike Elite
SlingStrike Slingshot**
Range: 60ft / No. darts: 2
£11 / \$10



**N-Strike Elite
Mega Magnus Blaster**
Range: 85ft / No. darts: 3
£12 / \$15



**Zombie Strike
Hammershot Blaster**
Range: 55ft / No. darts: 5
£15 / \$15



N-Strike Nite Finder EX-3
Range: 15ft / No. darts: 3
£15 / \$10



Zombie Strike Sidestrike Blaster
Range: 75ft / No. darts: 4
£15 / \$15



N-Strike Longstrike CS-6
Range: 35ft / No. darts: 6
£15 / \$30



N-Strike Recon CS-6
Range: 30ft / No. darts: 6
£15 / \$20

EVERY NERF BLASTER YOU CAN *BUY RIGHT NOW*



**N-Strike Raider
Rapid Fire CS-35**
Range: 35ft / No. darts: 35
£25 / \$30



**Doomlands 2169 Vagabond
Blaster 2015**
Range: 50ft / No. darts: 6
£25 / \$30



**Zombie Strike
Sledgefire Blaster**
Range: 65ft / No. darts: 9
£26 / \$25



N-Strike Blazin' Bow Blaster
Range: 40ft / No. darts: 3
£28 / \$20



**N-Strike Elite Mega
Thunderbow**
Range: 100ft / No. darts: 5
£28 / \$40



N-Strike Elite Retaliator
Range: 75ft / No. darts: 12
£30 / \$27



Vortex Pyragon
Range: 60ft / No. discs: 40
£30 / \$40



**N-Strike Elite
Demolisher 2-in-1 Blaster**
Range: 90ft /
No. darts: 10 darts, 2 missiles
£30 / \$40



**Zombie Strike
Doominator Blaster**
Range: 25ft / No. darts: 24
£30 / \$40



N-Strike Elite Rampage
Range: 75ft / No. darts: 25
£30 / \$33



**N-Strike Elite
Cam ECS-12 Blaster**
Range: 85ft / No. darts: 12
£55 / \$80



N-Strike Stampede ECS
Range: 40ft / No. darts: 18
£55 / \$50



**N-Strike Elite
Rhino-Fire Blaster**
Range: 90ft / No. darts: 50
£60 / \$100



Vortex Nitron Blaster
Range: 55ft / No. discs: 20
£70 / \$50



**N-Strike Elite Combat Creatures
Attacknid Dart Shooter**
Range: 45ft / No. darts: 12
£90 / \$80

044 | THIS AIN'T YOUR **GRANDDAD'S** **RACING SET**



Put your Scalextrics in the bin & say hello to the future

For some people it may be hard to believe, but there was a legitimate time where if you wanted to play a racing game it wasn't as simple as wrestling away some television time and sticking on an Xbox One or PS4.

You had to venture into the attic, pull out a dusty box full of Scalextric toys and then spend hours building tracks only to realise you didn't have any batteries for the car controllers.

Thankfully, Anki is here to revolutionise the racing game. Following up on the success of Anki Drive – a physical track-based racing game controlled by a smartphone app – was never going to be easy, but the company has succeeded by making a number of major improvements to the core design. For starters, the rollout vinyl track has been replaced by a modular, magnetic track system to let you

build your own wacky races. This new design also complements the improved artificial intelligence that powers the other physical cars, giving you other vehicles to race and battle against, even when your friends aren't around (or if they forget to charge their phones).

HOW DOES AN ANKI CAR DRIVE?

Build the track

It works in a similar way to Lego wherein every piece of Overdrive track can be snapped together with another, thanks to the magnetic straps on either end

£149.99 | \$149.99
anki.com

Anki Overdrive

A track-based racing game controlled by an iPhone or Android app that lets you race your friends and battle AI on your living room floor.

Each race is unique

Thanks to those code identifiers beneath the surface, you can essentially use any combination of available Overdrive track pieces to create more than 20 unique racing circuits

Under the pavement

Hiding beneath the faux pavement are thousands of special markers – not unlike the long Scalextric's racing lines. These act as code identifiers to tell the car camera where it is positioned

Smart app control

While the cars follow the track automatically, the player is able to control the acceleration and can even fire weapons to disable or slow down other vehicles, via the free smartphone app



"Anki is here to revolutionise the racing game"

Multiplayer

Anki Overdrive supports up to four players, but even if you're friends don't fancy it, you can race against Anki's own AI Commanders

On-board computer

Each Anki Overdrive car also has a 50Mhz computer on board, this is so that it can use positional localisation to analyse the track and anticipate turns and stunt jumps

It knows the track

Each vehicle has an undercarriage camera attached that is designed to scan the track 500 times a second. This ensures that all of the cars are aware of their precise location at all times

5 WAYS TO PLAY ANKI OVERDRIVE

Race: be the first to cross the line

Get your car on the track with others for an old-school race to the finish. While you don't steer in real-time, you can control speed, weapons and basic direction.

King of the hill: try to keep the lead

One of the better modes, this sees players vying for pole position and then holding it for as long as possible to win. It can get really chaotic on crazy track designs.

Battle: sabotage your opponents

Since every vehicle has a unique weapon, Anki supports a dedicated Battle mode that lets you chase others and blast them to hell; it's Mario Kart meets Tron.

Time trial: race against the clock

As basic as it gets, this lets you race fast to set time trials. It's the perfect mode to get used to the cars' capabilities and your track design before facing others.

Tournament: the ultimate battle

Overdrive tournament comes to Anki, letting you compete in four races and battle modes against 25 elite commanders, the ultimate test of skill.



ALL YOU NEED TO KNOW ABOUT TOYS TO LIFE BEFORE IT TAKES OVER THE WORLD

Toy Story *isn't* as fictional as we first thought

Toy Story first brought the idea of our toys coming to life to the big screen in 1995. This became the highest grossing film of the year and if anyone tries to tell you that they didn't imagine their favourite stuffed animal alive and talking, then you will probably be able to smell some smoke from their burning underwear. This wish is almost certainly why Toys to Life has become the most entertaining and exciting development in the videogame world since *Wii Sports* let you become a champion tennis player with a flick of your wrist and no sign of sweat.

The concept is so simple yet brilliant. You buy the game that comes with a couple of characters to get you started, then you pop a toy on the NFC pad where it is magically transported into the console game. Activision and Toys for Bob first brought the concept to the world in *Spyro's Adventure*, while Disney, Nintendo and LEGO have jumped on the increasingly cramped bandwagon with *Disney Infinity*, *Amiibo* and *LEGO Dimensions*. If only Woody and Buzz knew what they had started!

INSIDE THE MAGIC

Prepare for the illusion to be shattered right before your eyes

No batteries needed

The Disney Infinity Base is plugged into the console via USB. This is how it is powered so there's no need to buy any batteries

Step onto the portal

When you place the figurine on the Infinity Base, its chip communicates with an NFC reader in the Base, which sends the data to the console

Character building

Game and character data is stored on an RFID chip, so the game knows exactly who the character is and what level they are currently at

Go figure

The figurines themselves are purely decorative, with all the tech crammed into the circular bottom of the toys

GIVE YOUR TOYS AN ADVENTURE OF A LIFETIME

You'll need to have the game and at least one toy. Load up the game and place the toy on the hub



Disney Infinity

£14 | \$14
infinity.disney.com



Skylanders

£13 | \$14
skylanders.com

REASONS TO PLAY

Third generation

Disney has already reached its third wave of figurines, including a series of Marvel superheroes

Never-ending toy box

Infinity is less of an adventure and more about building. Create new in-game worlds to explore

Power up

Any character can use any power, so you can instruct Aladdin to ride Pegasus

REASONS TO PLAY

The original

Spyro's Adventure was the very first game out there to bring toys to life

Two become one

This one likes to innovate. SWAP Force lets you put the body of a toy on the legs of another

Be the Portal Master

You are the Portal Master in all the *Skylanders* games, tasked with defeating the evil Kaos



Amiibo

£11 | \$130
nintendo.com

REASONS TO PLAY

Nintendo only

Amiibos are exclusive to Nintendo consoles, so they only work with Wii U and 3DS games

Spoilt for choice

There are over 60 toys available, including Mario and Pikachu, with even more on the way

Tap and play

Amiibo is different in that you can tap the figure on the hub, rather than keeping it there



LEGO Dimensions

£30 | \$30
lego.com

REASONS TO PLAY

The usual DIY

As this is LEGO, you'd feel pretty short-changed if there wasn't some construction involved

A bricktacular adventure

Construct weapons and vehicles from LEGO bricks to save the LEGO world from Lord Vortech

Mix and match

Bart Simpson can fight alongside Batman while driving the DeLorean

ALL YOU NEED TO KNOW ABOUT ROCKET SKATES

(YES, ROCKET SKATES!)

Zoom past your friends in these supercharged slippers

The ideal pair of rocket skates would come with Wile E Coyote-style jets on the heels, but these would be dangerous. The closest you can get to having the speed of a *Looney Tunes* character would be to buy Acton's new RocketSkates. As the world's first lightweight, long-range, remote-free skates, they're powered by four brushless DC hub motors that can reach up to 12mph.

To get going, you push off with your dominant foot like you would with a scooter to make the motor kick in. The skate then uses Bluetooth technology to get the other spinning at the same speed. With your feet apart and your dominant foot in front, you lean your toes forward to go faster and push your heels back to make the skates brake. It's pretty simple but it takes some getting used to, even after watching Acton's instructional videos.

You also get quite a lot of use from one charge: two and a half hours charging gives you up to 90 minutes of continual skating. You can track the battery life on an app on your smartphone.

Walking is easier, but RocketSkating's more fun.

Put your best foot forward

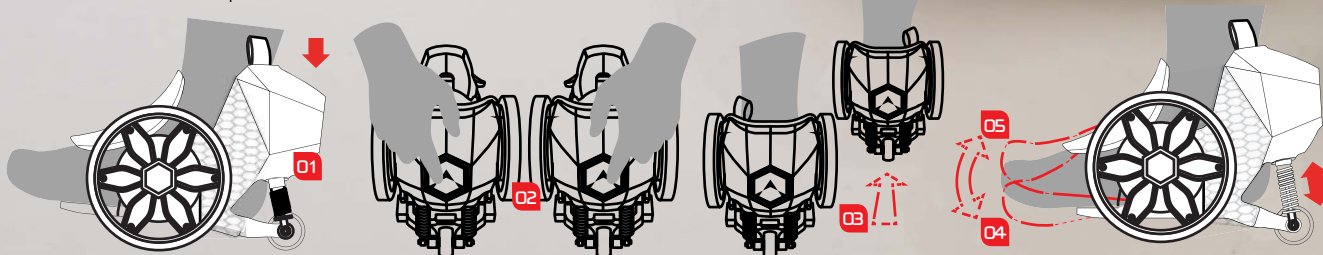
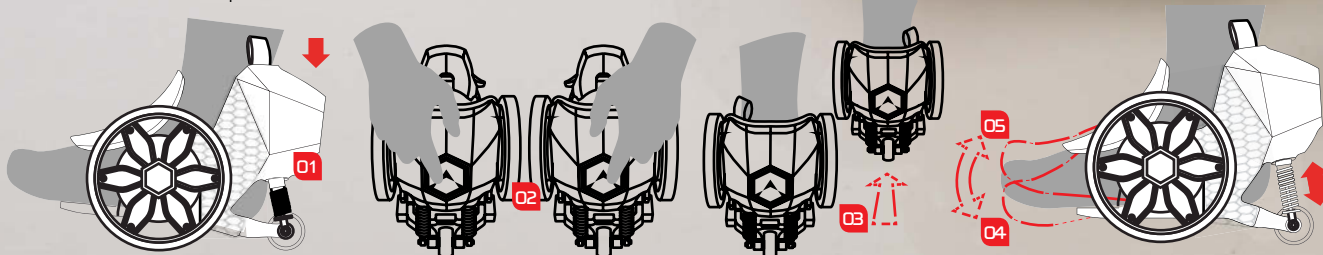
The skate with the red buckle should be on your dominant foot. This skate sends a signal to the other via Bluetooth

GET YOUR SKATES ON

Master your RocketSkates in five simple steps...

Strap the skates over your shoes while sitting down, putting the red-buckled lead skate (1) on your dominant foot. Turn the skates on by pressing the buttons on the heels (2). Stand up and kick off of the floor with the lead skate. Keep that skate in front

of the other and your feet apart (3). Push your toes towards the ground (4) to speed up then push the heel of the lead skate into the ground to brake (5). While skating, lean your body forward to maintain your balance, but do not lean back.





Be sure to check your local regulations before taking to the streets

Exploring deep space

We tried out the R10 Deep Space Black model, but the R6 Rocket Red and R8 Terminator Chrome models are also available at lower prices

£700 | \$700

RocketSkates.com

ACTON R10 RocketSkates

These motor-powered roller skates are built for use on paved surfaces and can reach speeds of up to 12mph. Wear them over shoes and get around faster.

Speedy Gonzales at your heels

Four 50W DC hub motors with on-board microprocessors mean that the RocketSkates can propel you forward at up to 12mph. Make sure you check local regulations before hitting the streets

Accessorise

Extra accessories such as battery packs, spare tires, brake pads and rear wheels are available to buy, so you could end up getting years of use out of just one set of RocketSkates



You can even keep them on your feet when going up stairs to save interruptions



THE ROCKET SKATE TEST

Three skaters, rocket around

Poppy

"I can definitely see them being pretty fun once I've mastered them, but I'm not sure they're worth the money."

Marcus

"Great fun, I loved them! I would definitely like my own pair, but the price would have to come down considerably first."

Naomi

"Skating is more difficult in these than I was expecting. I would get use out of them if they were a gift, but wouldn't buy them."



050 | HIGH TECH TOYS

PLAY AROUND LIKE **F1** AN RACER

While most of us will probably never have a pop star other half, a box at the Emirates Stadium or the deposit for a penthouse in Monaco, Razor's Crazy Cart makes it possible to inject a little of an F1 driver's luxury into your own lifestyle.

Lewis Hamilton's latest toy is probably more affordable than most of the gadgets in his house. The Crazy Cart is under £400, can reach almost 12mph and is powered by a battery that lasts for up to 40 minutes. The contraption looks ordinary enough, but once on the pavement it can twist, turn and drive from any 360-degree angle with help from the Drift Bar.

What's more, Hamilton isn't the Crazy Cart's only fan. Razor has amassed over 15,000 YouTube subscribers with videos of the Crazy Cart alongside other products. The hype surrounding the cart has led to a spin-off too; the Lil' Crazy is much smaller and aimed at little ones, has a speed of just 2mph and doesn't include the Drift Bar.

£400 | \$320
razor.com

Crazy Cart



Missing the brake pedal

The acceleration pedal of the Crazy Cart is controlled with your right foot, but there's no brake pedal

Drift bar

The drift bar enables you to either spin, drift or power forwards, making it easy to mix up your driving style or accelerate with speed

Steering wheel

Turn a full 360 degrees with precise turning and perfect control. The centrally placed steering wheel controls the pneumatic front tire that powers the Crazy Car

Designed not to topple over

The stabilising posts of the cart keep the entire vehicle balanced. The Crazy Cart runs on just the three wheels with all of the control being focused on the front one

Lewis Hamilton tears up
The Jonathan Ross Show
set on a Crazy Cart

© Rex

STAY IN CONTROL

The three basic moves to master

Spinning in place

Using the drift bar you'll be able to spin a full 360-degrees on the spot – just try not to get too dizzy!

Driving in reverse

Keep the fun going by learning to drive while in reverse, which again you'll need the Drift Bar for

Coming to a stop

Although there's no brake, you can come to a stop by lifting off the accelerator and spinning until you slow down



From the makers of **Gadget**

THE DRONES BOOK

Discover everything you need to know about one of the hottest gadgets on the market. Packed with essential advice and in-depth guides to how drones are changing the world, this is a must-have for any gadget lover.



Also available...



A world of content at your fingertips

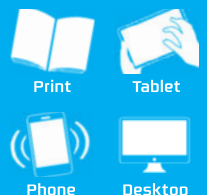
Whether you love gaming, history, animals, photography, Photoshop, sci-fi or anything in between, every magazine and bookazine from Imagine Publishing is packed with expert advice and fascinating facts.



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052 | WE GAVE THESE CONSOLES TO



retro GAMER

AND THIS IS WHAT THEY SAID

With more and more people getting on the retro-gaming bandwagon, it can be hard to find the right hardware – getting 30-year old hardware in working order isn't easy.

Luckily, if your favourite console was popular enough you can probably find someone making a new version of it and the Atari 2600, Sinclair ZX Spectrum and Sega Mega Drive dominated their respective eras. Atari's machine was home to arcade hits such as *Space Invaders* and *Asteroids*, the ZX Spectrum launched Britain's bedroom coding boom in the Eighties and the Mega Drive propelled *Sonic The Hedgehog* and *FIFA Soccer* into living rooms worldwide.

With new versions of each of these iconic machines on the market, you might just get away with not having to get up early and raid a car boot sale. So we've looked at each to see if they'll satisfy your inner pixel perfectionist. With the original components long out of production, each machine is emulated and can offer advantages and disadvantages compared to the real thing, so we spoke to our colleagues on *Retro Gamer* to make sure that our memories didn't deceive us.

£100 | \$154
retro-computers.co.uk

Sinclair ZX Spectrum Vega

The iconic British computer has now been remade in plug-and-play console form with a massive selection of 1,000 games built in and ready to play.



Shaped like a console joystick, this miniature Speccy might seem a little alien to those of you who grew up breaking joysticks on *Daley Thompson's Decathlon*, but once you're playing, it's classic 8-bit gaming just as you remember it. Well, almost.

"There might be a thousand games on it, but you won't have heard of 95 per cent of them," explains Darran Jones, editor of *Retro Gamer*. "Also, the lack of a proper keyboard makes the included text adventures almost pointless," he adds. "That said, you can add games with a microSD card and unlike the original tapes, you can load them in seconds."



£50 | \$77
atgames.net

Atari Flashback 6

An all-in-one version of the console that kick-started the games industry back in the Seventies. Comes with 100 built-in games and two wireless joysticks.

ALL-IN-ONE ATARI



Though the games are very simplistic Seventies and early Eighties releases, there's a lot of play to be had in the Flashback and its 100 games – especially since many big titles have been included. "This unit works well and the wireless joysticks are a nice touch, though I prefer my own well-worn ones," says staff writer Nick Thorpe. "The only problem is that you can't add your own games. So if you want to play *Pitfall!* or *Donkey Kong*, forget it. On the other hand, it does have *Warlords* so I can forgive almost any omission."





£50 | \$77
atgames.net

SEGA Mega Drive Genesis Retro Console

A remade version of Sega's hit 16-bit console for the Nineties-nostalgia crowd, complete with 80 built-in games and two wireless control pads.

SUPERSONIC FUN



While only half of the 80 built-in games are original Mega Drive games, production editor Drew Sleep is impressed with the range that has been assembled. "Mortal Kombat, Streets Of Rage and Sonic? This is my childhood!" As well as the built-in games and wireless pads, the console supports almost all original Mega Drive peripherals and games with its controller ports and cartridge slot. "It's almost the perfect replacement Mega Drive," Drew says, "but there's something really wrong with the sound. The pitch is off and sometimes slower than the original machine – it sounds like it has the most massive hangover."

THE NEW OLD-FASHIONED WAY

Veteran programmer, Jonathan Cauldwell on why he loves the ZX Spectrum Vega



Why does the ZX Spectrum console remain so appealing?

Its quirkiness helps. That might be because it was incredibly popular in an era before games had become big business, so

people were just inventing computer games when the Spectrum was king. Arcades aside, there was nowhere to go for ideas so people had to be very creative with their game designs. I don't know whether the Spectrum's simplicity is a factor in that, but innovation does appear to have stuck with the machine's developers ever since.

The Vega includes some of your games, and you've optimised more since it's been released – what draws you to the device?

The Vega is a really convenient [console] for gaming. It's easier than messing around with Spectrum hardware, you can even take it on holiday. It's also introducing a new generation to the charm of the Spectrum so it's natural that I'd want to get people playing new Spectrum titles as well as the classics. Of my titles Gamex 2 – Playing Dividends is a brand-new game, exclusive to the Vega for the time being and I'm sure I'll be releasing more new games and revisiting others in the next couple of years.

Which are your favourite games included on the Vega (both yours and others)?

I haven't worked my way through all the games on the Vega yet, but Farmer Jack in Harvest Havoc! is one of my favourites and I've also been enjoying Nifty Lifty and the classic Eric and the Floaters. Of my own titles More Tea, Vicar? and Byte Me are the ones I play most. As a developer I find I have to 'forget' my own games for a couple of years before I can enjoy them, if that makes any sense!

6 GAMES TO TRY...



Ristar

Mega Drive
This guy might not be as famous as Sonic, but his platform game is just as good – give it a go!



Streets Of Rage 2

Mega Drive
An obvious choice? Maybe, but it's the best scrolling beat-'em-up ever made, without a doubt.



Warlords

Atari 2600
You'll need a couple of sets of paddle controllers for this game, but you'll have hours of four-player fun.



Solaris

Atari 2600
Not only is this space shoot-'em-up fun, it's a great example of how far you can push Seventies hardware.



Nifty Lifty

ZX Spectrum
Dodge lifts, grab items. It sounds simple, but in practice it's a tricky – yet compelling – task to master.



Deflektor

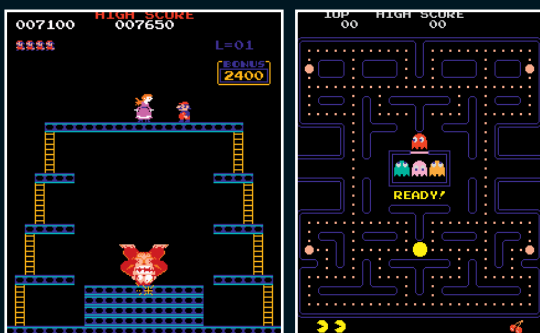
ZX Spectrum
This braitheaser is a high-pressure test of wits – use your laser to destroy targets while avoiding mines.

054| BUILD YOUR OWN DREAM ARCADE MACHINE



An arcade machine in the home is a dream for many of us, but a reality for far fewer. Today, it's actually quite achievable and you can even build it for yourself, whether you want the classic stand-up style or the cocktail-table type that was popular in pubs back in the Eighties. It's also perfectly possible to run elaborate multi-game emulation machines with MAME or grab the authentic circuit boards without the battered

cabinets they used to live in. So the only limit to the games you can now run at home is your imagination. There's no single best approach to building a cabinet, but we can certainly help to get you started by making sure you've considered all of your options – and of course, avoided the common pitfalls. Once you're done, all you'll need is the dingy lighting and dodgy smells to complete the illusion of having your very own arcade.



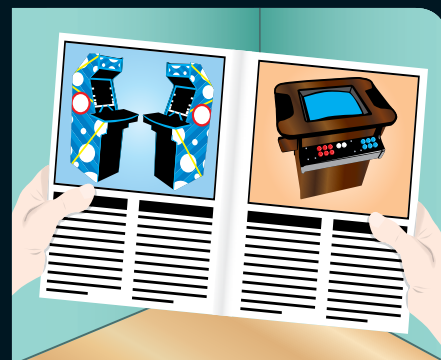
SIMPLY THE BEST

Of course, the biggest question is what you should put in your own cabinet. For mass appeal you could go for *Pac-Man*: the timeless maze game featuring gaming's first recognisable protagonist and a range of fruit that shames our local supermarket. If you're a hardcore high-score chaser, another golden age classic to try is *Donkey Kong* – not only is it the first ever *Mario* game, it's the most prized world record in classic gaming. If you're a bit younger or more competitive, then *Street Fighter II* is the obvious choice. Our Ryu can beat *anyone* – just saying.



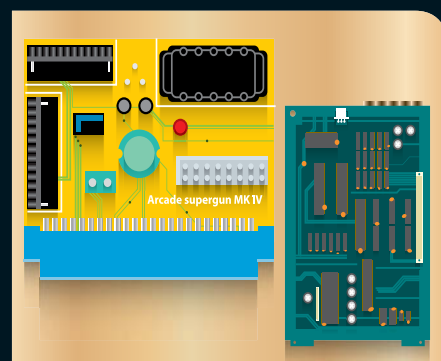
THE MAME GAME

MAME is an excellent piece of software capable of running hundreds of arcade games, but its legal uses are limited. While some ROM files have been authorised for distribution on the MAME website by their copyright holders, it's flat-out copyright infringement to download the vast majority of arcade games. So no, we're not going to tell you where to get them or how to run them. Sorry! Of the ones you can definitely get freely and legally, we're partial to Exidy's *Top Gunner*: an awesome-looking wireframe shoot-'em-up that was the last vector graphics game to be produced for the arcade.



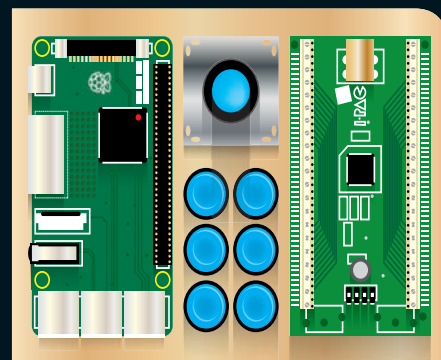
01 Set your spec

Decide what you want to play and how you want to play it ahead of time – it will save you a lot of hassle later. Are you going for a stand-up or cocktail cabinet? How about a bartop? Vertical or horizontal monitor? Joystick, trackball, wheel or spinner controls? How many buttons? Which game do you want to play?



02 My Jam

If you want to run original arcade boards, most connect to arcade equipment via the JAMMA connection standard. You'll have to purchase an adapter (known as a Supergun) to output to consumer monitors and speakers. Your chosen board might also need additional wiring for extra buttons, so do your research.



03 PC brigade

If you're not using original hardware, it's common to use a computer – often a small form factor device that's loaded with multiple games. A Raspberry Pi with a RetroPie SD card image works well for the task. To connect arcade joysticks and buttons, pick up a USB encoder like the I-PAC.

Anatomy of a 1983 Atari Star Wars arcade cabinet

Marquee

The lovely backlit panel displays the artwork for the game – which, in your own cabinet, you can make to be literally anything!

Monitor

Early arcade games like Atari's Star Wars and Asteroids used vector monitors, which drew lines directly on the screen. For your own build, an LCD panel is the modern and power-efficient option, but purists love the scanlines of a bulky CRT

Controls

Star Wars used an awesomely cool X-Wing style yoke, but you'll probably want something more versatile. Fun fact: the JAMMA connection standard only supports three buttons per player, so you'll probably need to wire up some more



Coin slot

Totally unnecessary for a home arcade machine, although fitting one would give you the coolest piggy bank ever

Video circuits

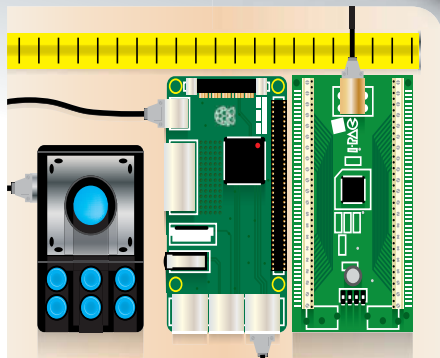
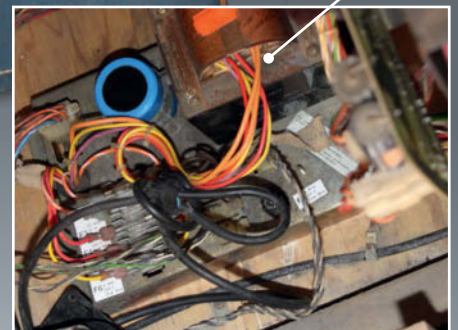
While the main circuit board controls the game play, it's the video boards that do the hard work of drawing the game onto the screen. There can be enough electricity stored in here to do you serious damage if you touch the wrong part – even when the game is switched off

Circuit board

In the golden days, the cabinet likely contained one or two gameplay boards. Today's arcade machines more commonly contain PC setups running MAME

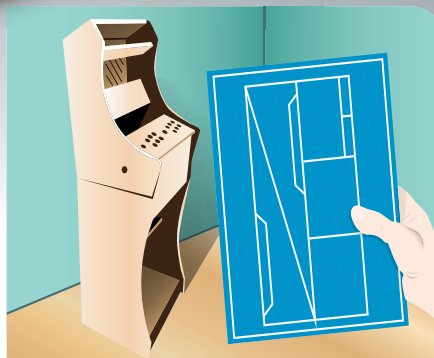
Power source

The power supplies of vintage machines tend to look like high-voltage death-traps, you can keep things neater by integrating a power strip into your machine



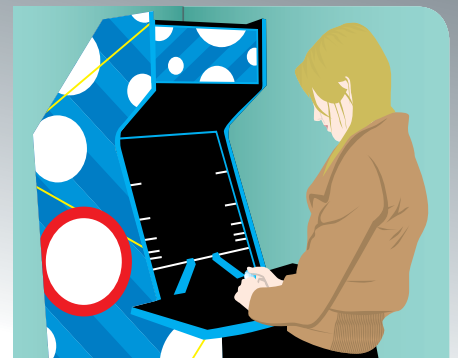
04 Gut check

Before you go screwing everything into a big wooden box, make sure you're not missing anything and that you can play the games you want. And most importantly that it works! It's also a good time to take measurements of your completed setup as these will come in very handy for the next step.



05 Choose your shell

There are a number of plans available to view online if you're confident with your carpentry – we particularly like one that can be made from just one sheet of plywood. There are also flat packs offered by eBay sellers. If you're going for original hardware, be sure you have allocated enough space.



06 Assemble and play

Now it is time to build your cabinet! If you want to give it a paint job, now's the best time to do it – it does finish off the look nicely. If you're feeling particularly flash, get some custom art printed on vinyl stickers instead. Once it's ready, mount your pretested innards and enjoy!

ALL YOU NEED TO KNOW ABOUT THAT

PINBALL MACHINE

YOU'RE NOT ALLOWED TO BUY

Pinball machines have come a long, long way from their origins as bagatelle tables in the 17th century – the modern machine features dozens of flashing lights, complex game logic and all kinds of gimmicks, from magnetised areas to moving plastic characters.

Surprisingly, even things we consider essential to the game today are relatively recent inclusions – flippers didn't arrive until 1947!

Today, pinball isn't the massive pastime it once was, but dedicated players continue to play and compete for the highest scores. Serving this community are manufacturers like Stern Pinball and Jersey Jack Pinball that have kept innovating in order cater for both private collectors and the arcade industry. However, despite their 21st century production techniques, most of the machines work as they have for decades: on simple mechanical interactions and good-old magnetic force.

Scoring wheels are a thing of the past

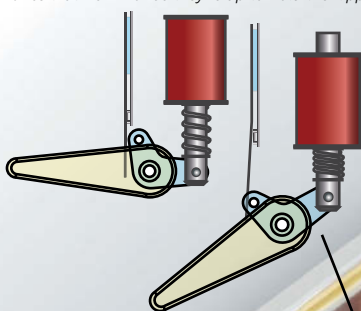
Modern pinball machines keep track of scores and drive their LCD panels with custom computer setups that are typically hidden behind the backglass. Older machines used simple scoring wheels

Bumper speed

When the ball hits a bumper, it pushes a ring to complete a circuit. This then activates a solenoid and pulls down the bumper to then eject the ball at high speed

Flipping mad

Many components of the pinball table are controlled with solenoids. These are magnetised to move metal plungers in order to create game states. Two sets of solenoids control the flippers: powerful ones for the initial thrust, then weaker ones that kick in once they're up to hold the flippers in place



It's got balls

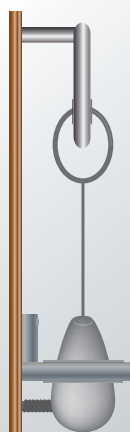
A small metal switch used to create lane-based goals, these are triggered as the weight of the steel ball rolls over them. They're typically lined up in rows of two or three

Don't swing that pendulum

Many tables employ multiple methods to stop players rocking the board – the most ingenious is a metal pendulum centred inside a conductive ring. Complete the circuit and sound the alarm

Electromagnets

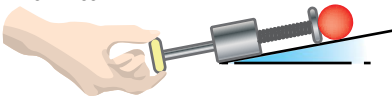
Rather than moving other parts, these magnets are hidden beneath the table and are used to keep the ball locked in position – or worse, send it flying in crazy directions





Gun triggers

Traditionally a spring-powered plunger, in recent times electronic launchers have sometimes been substituted in their place to ensure a consistently powerful start. Occasionally, electronic launchers are even designed like gun triggers



KATE MORRIS' PINBALL PICKS

As the highest ranking woman in the UK Pinball League, Kate Morris is always enthusiastic about this long-lived pastime and its unique physical feedback. "You press a button and an actual flipper moves, while a small silver ball gets hurled around a playfield. Couple that with flashing lights and cool sounds and it's difficult not to be drawn in!"

Lord Of The Rings

"I love the books [and] films so completing modes where you help the Ents attack Isengard make it much more fun for me."

£4,220 | \$6,499



AC/DC

"It has a different kind of strategy to many others. It's about building up a song jackpot, then trying to cash it in."

£4,995 | \$5,699



TRON: Legacy Pinball

"It flows well, the music is great and the final goal really feels like an achievement."

£5,695 | \$5,699



3 BEST PLACES IN THE WORLD TO PLAY PINBALL



Funspot Family Fun Center
Laconia, New Hampshire, USA
funspotnh.com

As well as contemporary machines, the world's largest arcade features a great selection of the most vintage tables.



Pinball Hall Of Fame
Las Vegas, Nevada, USA
pinballmuseum.org

The biggest collection of pinball games available anywhere in the world with over 200 machines!



Hungarian Pinball Museum
Budapest, Hungary
flippermuseum.hu

Opened in 2013, this central European pinball paradise boasts 130 machines for visitors to enjoy.

058 | BUILD A **POTATO** **POWERED** **CLOCK**

AND 6 OTHER **COOL** EXPERIMENTS

From potatoes to plasma balls, Gadget goes all scientific

Boil 'em, mash 'em, stick them in a current

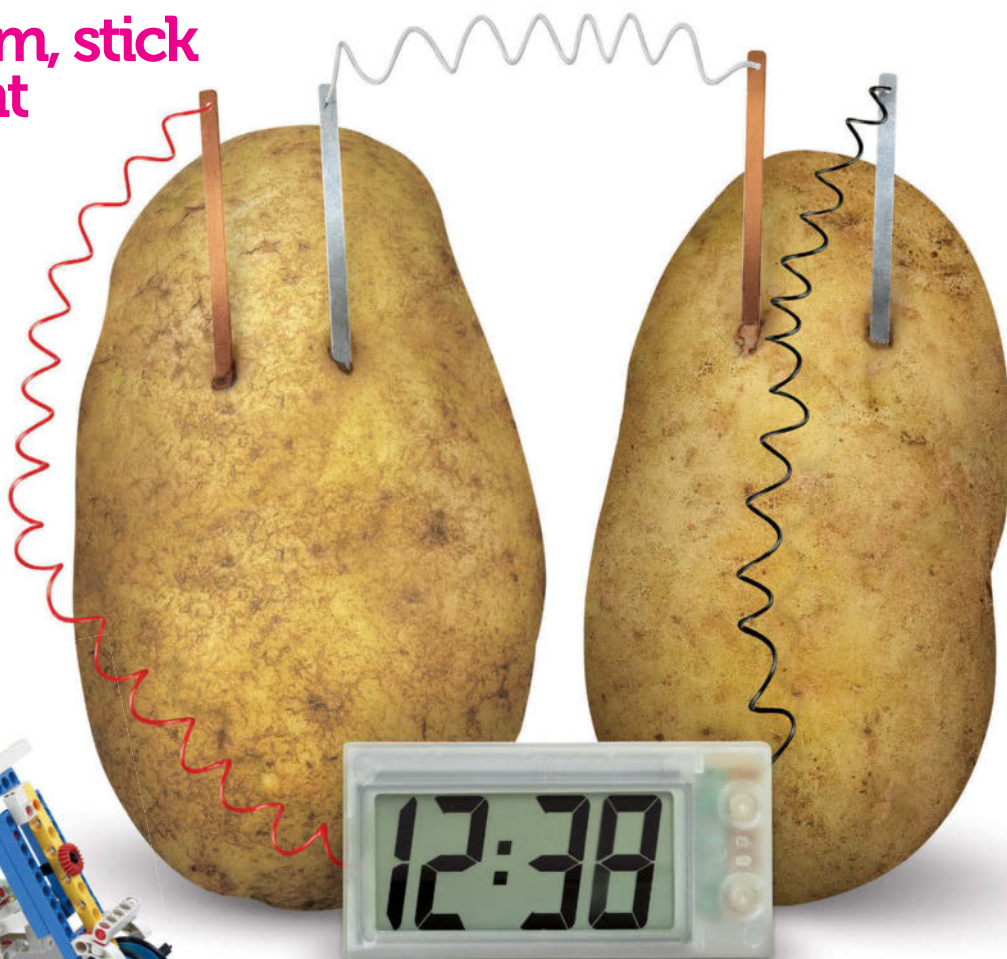
Look, no batteries! Behold the power of vegetable-electrolyte power with the potato clock. Two simple spuds that connect up to make a circuit, it is an easy way to demonstrate how a basic circuit works. It's sure to make the mantelpiece look that little bit quirkier if nothing else.

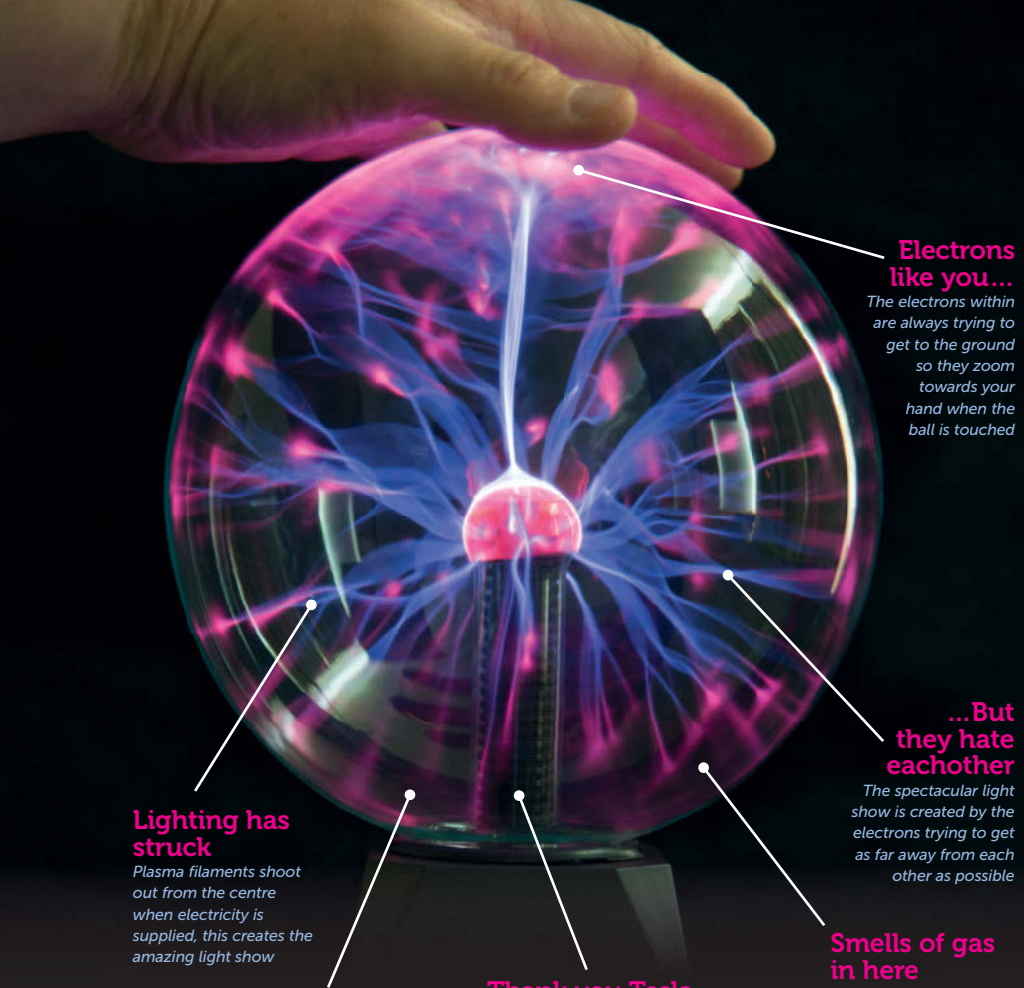
4M Potato Clock | 4m-ind.com | £11 | \$6

Hydraulic air and water-powered mini buggies

This small vehicle utilises a pneumatic hydraulic engine that runs on good old water. Containing both air and water powered systems, it's a really cool toy to race around indoors and out. There are 30 types of models available along with a colour instruction book. We're far too excited about this one.

Air+Water Power Plus
thamesandkosmos.com | £35 | \$90





Electrons like you...

The electrons within are always trying to get to the ground so they zoom towards your hand when the ball is touched

...But they hate each other

The spectacular light show is created by the electrons trying to get as far away from each other as possible

Lighting has struck

Plasma filaments shoot out from the centre when electricity is supplied, this creates the amazing light show

Danger! High voltage

The glass acts as a vacuum to the high frequency current. Krypton is inside but don't worry, Superman can still touch it

Thank you Tesla

The sphere's origins come from a lamp invented by physicist Nikola Tesla, so he's the reason why you're enjoying the show

Smells of gas in here

Noble gases like neon, argon and xenon fill the inside of the ball and surround a high-voltage electrode in the centre



Who doesn't like hypnotic & interactive lightning bolts?

With its 15-cm (6-inch) dome, the plasma ball is an impressive looking piece of kit. The 'ultimate interactive light show', lightning flies to your fingertips when the orb is touched. Its movements react to music so turn up the music to watch it go wild. Staying in always was the new going out.

Funtime Plasma Ball
funtimegifts.co.uk
£20 | \$31



Your very own indoor solar system

This is a sweet little gadget. Aimed at kids, adults will still find it fun as you help your little one name the planets and the constellations. Turn off the lights, find a free wall or ceiling and enjoy the show. Remember, Pluto is a dwarf planet, but you knew that already.

Motorised Solar System
sciencemuseumshop.co.uk | £32 | \$49



Indoor twisters and typhoons

If you can't afford the time and energy to be a storm chaser, this is the next best thing. A three-dimensional model, the materials provided include a fan and an electric motor with a variable speed control, you can create the vortex motion that a real twister makes.

SM Tornadoes and Hurricanes
sciencemuseumshop.co.uk | £30 | \$46

A science lab in a box



With 11 chemicals included in the box and everything you could possibly need for home experiments (goggles, pipettes, test tubes and much

more), this product doesn't do things by half. It also supports the UK National Curriculum too, so it's both educational and fun. An ideal combination for any young budding scientist.

John Adams Chemistry Set
johnadams.co.uk | £25 | \$51

Electronics made easy with magnets

It's aesthetically appealing and works like a charm, this magnet-based gadget is a joy to play with. Blowing all boring circuits out of the water, this cool device is an easy and hands-on way of learning how currents flow. Pick it up while it's hot and create your own electronic projects to your heart's content.

Little Bits Electronic Base Kit
littlebits.cc
£85 | \$99



SERIOUSLY, WHY

DON'T YOU OWN THIS STUFF YET?

Killer fun doesn't have to come
in big packages

Paper planes get a futuristic upgrade

Paper planes might have been great back in secondary school when trying to hit someone in the back of the head, but the lack of accuracy makes them somewhat useless and you may end up hitting the teacher instead. Introducing PowerUp 3.0, a handy little module that turns any paper plane into a smartphone controlled weapon of accurate annoyance.

PowerUp 3.0
£40 | \$62
firebox.com

How to steer

Download the app and tilt your
smartphone left and right to steer
your paper plane

Crash proof

The carbon-fibre
body protects the
motor and propeller
from heavy crashes

10-minute flight

Fully charged, you can fly the plane
over your teacher's head, just out of
their reach, for 10 minutes

"Turns any paper plane
into a smartphone
controlled weapon"



It really hovers!

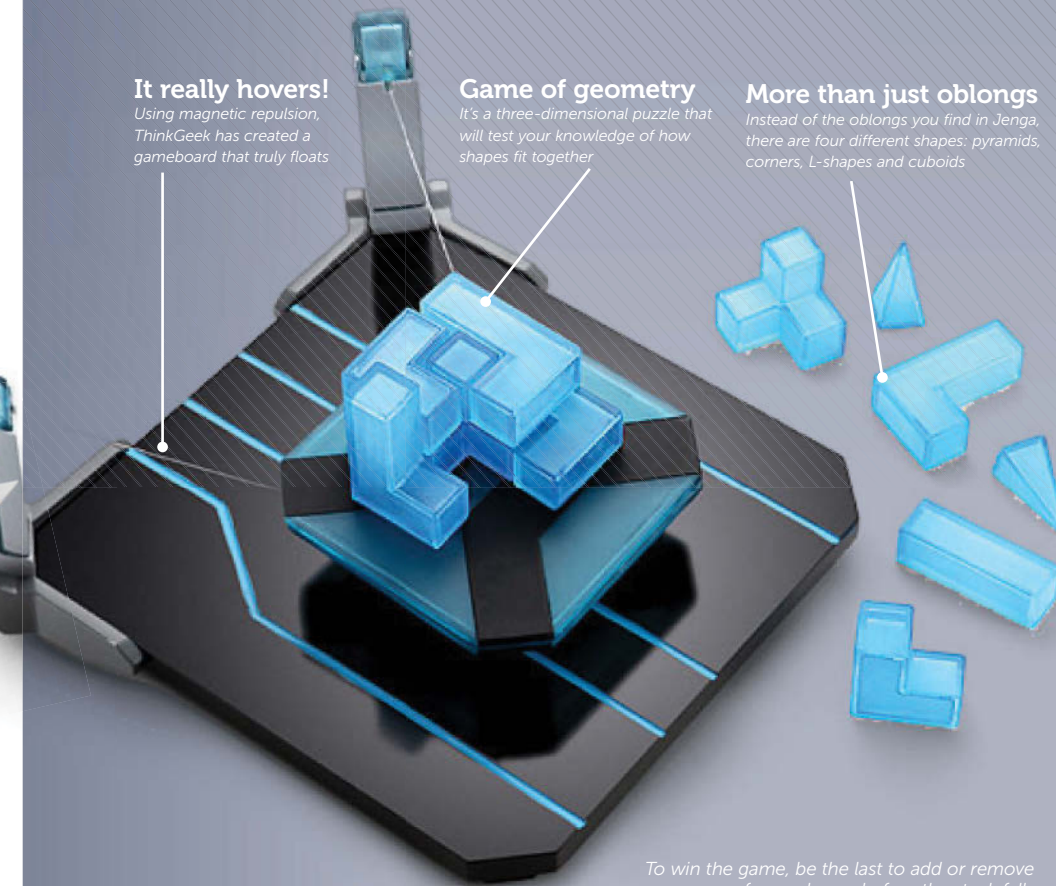
Using magnetic repulsion, ThinkGeek has created a gameboard that truly floats

Game of geometry

It's a three-dimensional puzzle that will test your knowledge of how shapes fit together

More than just oblongs

Instead of the oblongs you find in Jenga, there are four different shapes: pyramids, corners, L-shapes and cuboids



To win the game, be the last to add or remove one of your shapes before the stack falls

Because only losers play Jenga

Forget about any construction games you have played before because Hoverkraft is the future. It has you stacking three-dimensional pieces cautiously on a hovering gameboard. Think Jenga meets Tetris and that's if they meet in the world of Tron. Adjustable magnetic repulsion also lets you tweak the difficulty by altering the strength of the supports.

Hoverkraft
£30 | \$46
firebox.com



Put a stop to all your family feuds with this launcher

Conflict is a natural part of any healthy family's weekly activities and that's why harmless conflict resolution is so important. Put a stop to bickering, bad hair days and anything else you may encounter with an AirZooka. With its built-in elastic launcher system you can fire balls of air at speeds of up to 50 mph.

AirZooka Air Launcher
£16 | \$13
menkind.co.uk



Warfare without the bloodshed or eye strain

Sure, you could buy the new *Call Of Duty* and be bored with it in a matter of days, but wouldn't you rather take to the streets in a game of one-versus-one laser warfare? Two guns, two headsets and (insert gruff voice here) *no rules*. Well, aside from a 50-metre shooting range that is.

Silverlit Lazer Mad 2.0 Battle Ops game
£45 | \$80
menkind.co.uk



Making magic is easy with the power of technology

Look, magic is hard. It also doesn't help that a magician never reveals his tricks, which is just rude. That's why you should take to Marvin's iMagic, a way to perform magic tricks and dazzle your friends with nothing but a smartphone and clever use of augmented reality and animation.

Marvin's iMagic Interactive Box Of Tricks
£20 | \$40
marvinsmagic.com



How to make robotics without batteries

Understanding robotics is difficult, but this little LEGO-style robot makes things a lot easier. Build six eco-friendly robots – no screws required – and better yet, have them powered by the sun. Okay, so we don't get much sun here in the UK, but that's alright as you can use a 50 watt halogen bulb instead.

6 In 1 Solar Kit
£12 | \$22 red5.com

Make an airboat, a windmill, a puppy or two different types of planes



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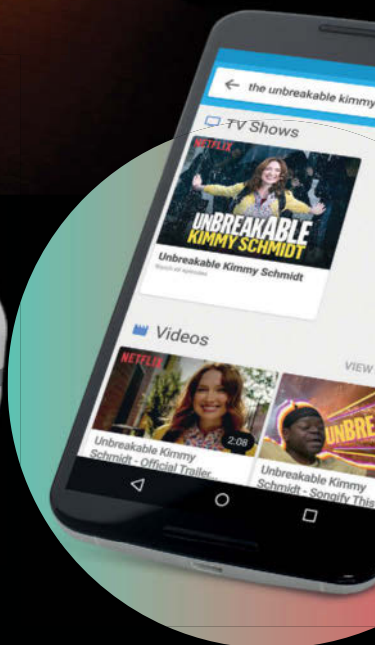
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Offer ends 31st December 2015. Promo code XMAS151

064 | YOU DON'T NEED A NEW TV



YOU DON'T NEED A NEW TV

The total guide to AV add-ons for better boxset bingeing

Lets face it, we collectively spend a long time sitting in front of our television sets. Whether it's catching up with our favourite soaps, finally getting round to watching the latest season of *Orange is the New Black* or perhaps even sitting down and enjoying the latest Hollywood blockbuster, we're always **consuming content**. But as we spend so much time with our television sets, it seems almost criminal that only a handful of people take their time to equip themselves with the right tools they need to get the best viewing and audio experience possible.

Some may scoff at the thought and think that they could simply buy a new TV to fulfill this, but trust us: you'll be wasting your money. There are hundreds of products on the market in the forms of audio systems, light enhancers and streaming accessories that can take your current AV suite to the next level. Technology has advanced so much in recent times that most of these kits are wallet-friendly and the set up takes a matter of minutes instead of hours. We've explored some of the absolute best AV enhancers that you really need to consider buying right away.



066 | YOU DON'T NEED
A NEW TV

WANNA KNOW WHAT'S INSIDE YOUR *NEW* APPLE TV?

This is Apple's next bid in taking
over your television screens

There's no denying that the Apple TV has yet to really hit the dizzying heights set by their iPad and iPhone range, but it's most recent update shows that Apple really is intent on taking over your TV set. One of the real benefits of the Apple TV is that it caters for all media types and we mean everything. Want to watch the latest Hollywood blockbusters? Easy. Want to catch up on the latest episodes of *The Walking Dead*? No problem. Using AirPlay, users are able to stream content directly to the Apple TV without the need for wires or an overly complicated set-up process. The addition of high-end encoding means that streaming is not only instant, but also reliable and generally error free. If you're heavily involved within the Apple ecosystem, this really is the next TV gadget you need.

£59 | \$69
apple.com

Apple TV

Apple's attempt at taking over your TV is a single box with an accompanying remote that includes full Siri integration.

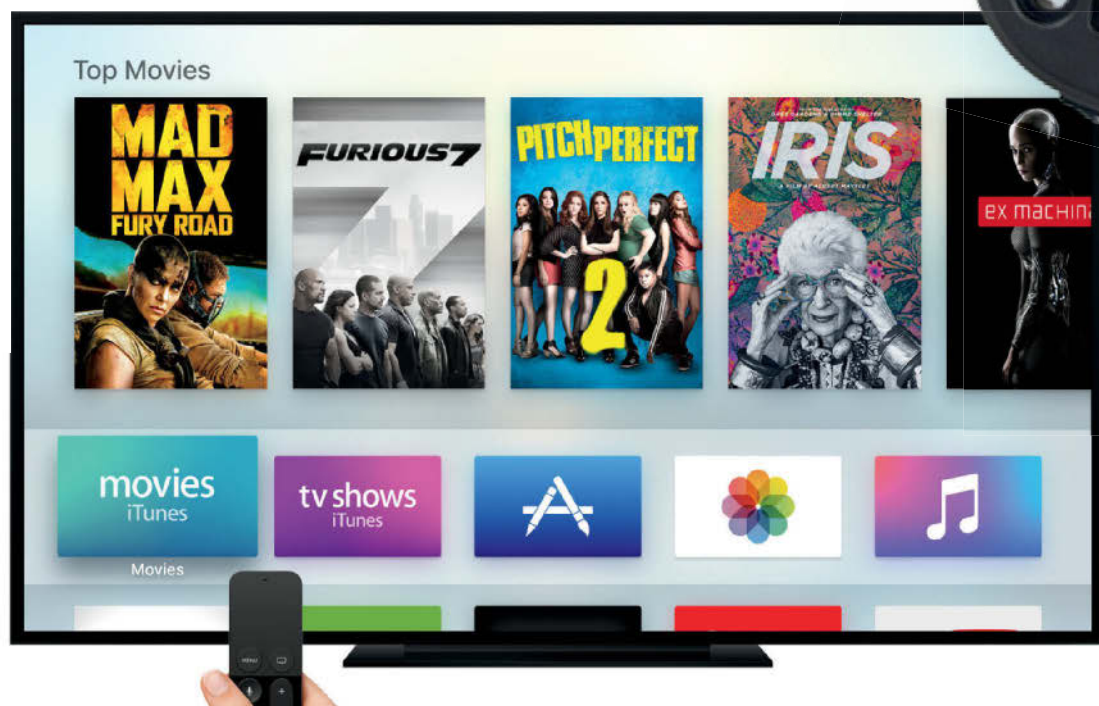


64-bit power

TvOS is a massive operating system, so the added 64-bit power can be a big boost to help things run smoothly

Bluetooth 4.0

Now the accompanying Siri remote doesn't need a direct line of sight with your Apple TV



BEST APPLE TV APPS



Plex
Avid film buffs can use the Plex app to store and stream the movies you have on your iPhone or iPad.



Airbnb
Users are able to browse, rent and leave feedback for rooms and apartments in countries all over the world.



YouTube
As well as managing videos uploaded to your own channel, it's simple enough to create a playlist of videos.

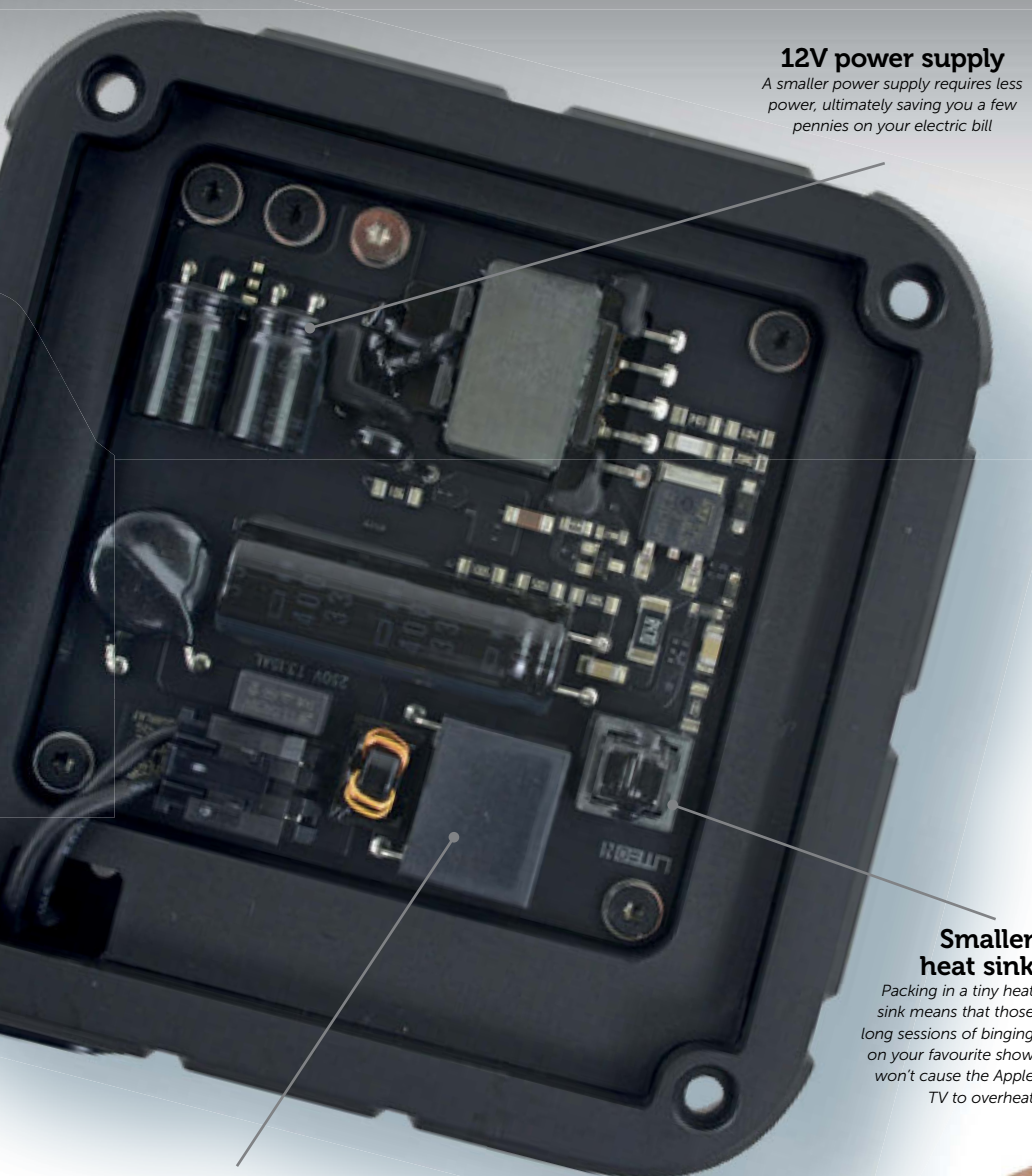


CNN
Want the latest headlines on your TV? CNN will provide you with all the stories you could ever need.



VLC
Dodgy file extensions can be a problem for many apps, but VLC makes streaming these movies easy.

"This really is
the next TV
gadget you
need"



12V power supply

A smaller power supply requires less power, ultimately saving you a few pennies on your electric bill

Smaller heat sink

Packing in a tiny heat sink means that those long sessions of binging on your favourite show won't cause the Apple TV to overheat

SK Hynix flash storage

32GB of on-board flash storage means it's possible to collate all of your favourite programmes and apps on your Apple TV



USB-C

Apple has been the pioneer when it comes to integrating USB-C into their products. Connecting your Apple TV to Mac will now be much easier

"HEY SIRI"

The new Siri remote isn't your standard television remote, instead it has fully integrated voice control for easier navigation. The dual microphones located at the top of the remote work in tandem with the Apple TV box, utilising a range of voice controls to make managing media, navigating menus and other functions easy. There's also the added benefit of a built-in 410mAh battery that is rechargeable via the Lightning port on the bottom of the device.

"I want to watch"

Siri will perform a full search of tvOS and your installed apps to find the movie or TV show then immediately start playing it

"Find me highly-rated movies"

Thanks to Apple TV's links with Rotten Tomatoes, Siri will look to deliver a page of the most highly acclaimed titles

"Turn on Enhanced Speech"

Enhanced Speech boosts the dialogue in films and TV shows, while lowering both the sound effects and music scores

"What did he just say?"

Siri will skip back a few seconds and then replay the most recent lines of dialogue, as well as adding subtitles

Gaming at your fingertips

The Siri remote doubles up as a game controller for the thousands of titles on the App Store, meaning there's no requirement to have your smartphone to hand as you find with the Chromecast.



IS ***THIS*** THE CHROMECAST THAT MAKES YOU CARE ABOUT **CHROMECAST?**

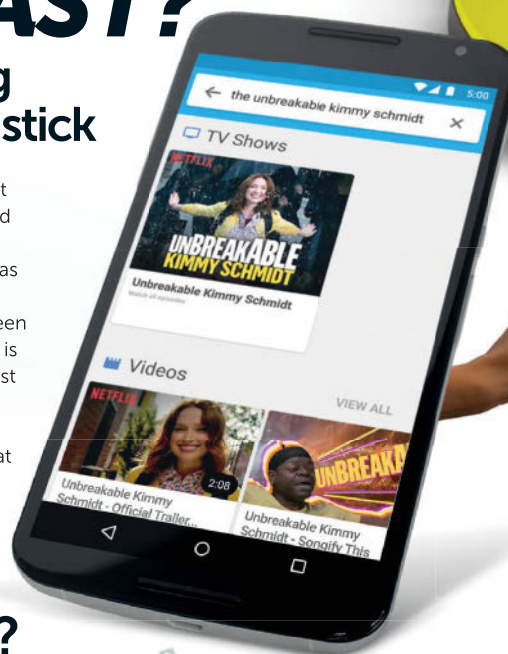
Why you should be using Google's new streaming stick

A staggering 20 million units of the original Chromecast were sold globally and based on initial sales, it's believed that Google's latest Chromecast device will far surpass that. The HDMI stick has been improved in multiple areas with it being faster and more capable to hold a Wi-Fi connection, not to mention its streaming times have been cut almost in half. Let's not forget that the Chromecast is substantially cheaper than the Apple TV and for the most part you'll find they have the same features. While the added benefit of a voice-controlled remote may please some, the Chromecast has a radically improved app that makes it easier to manage and stream the content that matters to you. You'll also find that the Chromecast is generally easier to set up and install.

£30 | \$35
google.com/chromecast

Chromecast

Cast anything and everything from an iOS, Android or Chrome devices to your TV with the help of Google's brand new Chromecast.



Simply plug the USB connection of your Chromecast into the back of your TV

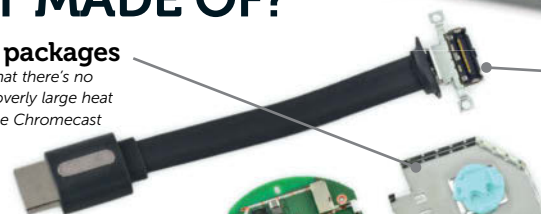
WHAT'S IT MADE OF?

Big things in small packages

A dedicated power port means that there's no need for a built-in battery or an overly large heat sink that could quickly bulk up the Chromecast

Start from scratch

Having trouble setting up the Chromecast? The embedded reset button can be used to set it back to its default settings



Quality streaming

Streaming is Wi-Fi intensive, so the added bonus of dual-band Wi-Fi will help keep your stream at peak quality more often

Turning down the heat

The original Chromecast had overheating issues, the inclusion of thermal paste should keep the new Chromecast icy cold

The rubber casings are handy

While it may seem an odd choice of material, the rubber can considerably reduce Wi-Fi interference from other devices

A strong antenna

Another aid to maintaining a strong connection is the addition of a multidirectional antenna that can lock on to the weakest of signals

"Let's not forget that the Chromecast is substantially cheaper than the Apple TV"



SO THE **ROKU** DOES **4K** STREAMING NOW

This small gadget now packs a much bigger punch

The differences between HD and 4K in terms of picture quality is huge, so it could potentially be a big reason why millions of users are opting to purchase a Roku 4. While its design and build are exactly the same to that of the Apple TV, it's one of the very few devices on the market to incorporate 4K streaming capabilities into its overall build. Furthermore, the Roku 4 is still one of the cheaper streaming devices on the market and works with hundreds of compatible iOS and Android apps.

Roku 4
£86 | \$129 | roku.com

RECORD DIGITAL TV FOR FREE

Lets face it, subscription TV isn't cheap. The rising costs of purchasing certain TV rights are being offset on us, the consumer, but alternatives are out there if you know where

to look. Freeview, Freesat and YouView are your main options for enjoying cheaper digital TV, but they predominantly offer the same channels. Here are some different options.



Humax 1100S

The 1100S enables users to scroll back seven days to catch up on any content they missed, while also mapping out programmes they want to record.

£219 | \$340
humaxdirect.co.uk



Panasonic DMR-HWT130

While the added Freeview+ HD is a bonus, the DMR can also record two full TV programmes simultaneously.

£189 | \$290
panasonic.com



Hitachi HDR5T01

One of the coolest things about the HDR5T01 is that users are able to manipulate live TV, whether it's pausing or rewinding.

£139 | \$215
hitachidigitalmedia.com

THE **ULTIMATE** MEDIA HUB

Project Kodi is a one-stop open source program that can be installed on any set top box. Users can then install various apps and streaming tools to keep their movies, audio and pictures all in one place. Plus the most recent release of Kodi enables it to be used on both 4K and 3D television sets. For more information, visit kodi.tv.



Link with Hue bulbs

The AmbiLight TV links with your Hue bulbs that you will need to place directly above the TV to maximise the effect

Add some strips

Two Philips LightStrips are placed either side of the TV, these are used to help give the effect of colour leaving the screen

Light radiation

Once the items are set up, playing a movie with distinct colours will bathe your entire room in bold hues



AN ALL-NEW TV GIMMICK THAT WE SECRETLY LIKE

The kind of light show you really want to see

Philips has been a pioneer for smarthome technology and the AmbiLight feels like a culmination of their past efforts. Using light sources that hit the display at different angles, the AmbiLight adapts and changes the lighting depending on the type of movie or TV show you're currently watching, consequently, giving the effect of the colour coming out of your screen. Watching a horror movie? Expect blacks and greys to emanate from the AmbiLight at the scariest moment, while you can also expect to see vivid yellow and greens appear throughout when watching a nature documentary.

£900 | \$1,380 | philips.co.uk

070

YOU DON'T NEED
A NEW TV

£30 | \$35

google.store.com

Chromecast Audio

An easy-to-use and remarkably cheap way of adding full Wi-Fi connectivity to any old or traditionally dumb speaker that you may have hiding in your loft.

Give your old speakers a 21st century update

Audio perfection

Users can also find an included stereo-line driver to help keep tracks as close to lossless quality when being streamed

Dual-core power

To help keep your tracks sounding awesome, the ARM Cortex-A7 links in with the built-in media processor

Never be without signal

To prevent signals being lost or dropped, Google has opted for a multidirectional antenna to be implemented into the Chromecast Audio

Connected in every way

There's a single chip included in the Chromecast Audio that holds all of the Wi-Fi, Bluetooth and NFC connections in one place

Powered by USB

The rear USB port is used primarily for keeping the Chromecast Audio powered whenever it's in use

01 Power it up

Connect the microUSB end of the accompanying power supply into the rear port of the Chromecast Audio (CA).

02 Connect to the speaker

Now use the 3.5mm cable to connect both the CA and any speaker together, before opening the official Chromecast app.

03 Get the party started

Follow the set up instructions through the app and once done, open your music app of choice and start casting some tunes.

TURN **ANY** DUMB SPEAKER INTO **SOMETHING SMART**

How have we lived without this?

The concept of adding smart functionality to an ageing speaker may seem like a far-fetched idea, but it's entirely plausible using the Chromecast Audio (CA). Built and designed in familiar Chromecast style, the CA plugs into any open optical, RCA or 3.5mm jack on the rear of a speaker and provides instant Wi-Fi

connection. Then through the Chromecast app, users are able to cast any number of songs and tracks across to the newly upgraded speaker via Wi-Fi, without any need to connect any additional wires. Did we mention that the Chromecast Audio is only £30? Seriously, you need to get one of these now.

GET CONNECTED

Other gadgets to link your hi-fi to the Wi-Fi

**Griffin Twenty**

Twenty is a digital amplifier that can receive music via Bluetooth or NFC and then stream it directly to any speaker.
£98 | \$149.99
griffintechology.com

**Rocki**

Specifically targeting Spotify users, the Rocki connects to your speaker and enables you to wirelessly stream personalised or automated playlists.
£29.99 | \$49
myrocki.com

**Beep**

The Beep is a dial-shaped hub that connects to any speaker and adds full wireless support so users can fully control their music from their smartphone.
£97 | \$149
thisisbeep.com

Space-saving subwoofer

The slender subwoofer may seem small, but don't be surprised when the 200 watt offering here really blows the socks off any audio that's passed through it

Blu-Ray player

As well as various audio solutions, this kit also comes with a Blu-Ray player that links in with both the speaker and subwoofer

Complete connection

Users have plenty of choices when it comes to connecting to this system

£1,045 | \$1,600
harmankardon.com

Harmon Kardon 2.1 Theatre Audio System

The complete all-in-one audio system that hopes to transform your television sound and bring cinema-quality audio straight to your living room.

THIS IS WHAT SOUND SHOULD SOUND LIKE

Experience the cinema without someone kicking the back of your chair

Creating that cinema experience in your home goes far beyond opening up a bag of popcorn and dimming the lights to set the mood. Instead for those of you who are serious about bringing the cinema home, then looking for a home cinema system is the place to start. The Harmon Kardon 2.1 Home Theatre Audio System takes your current set to the next level, offering unprecedented audio that links with your TV. Dual 65-watt power amps can help provide immersive audio, while the 200-watt powered subwoofer will fill your room with superb bass, highs and lows.

PIMP OUT YOUR HOME AUDIO FOR CHEAP

No wires needed

Not everyone is going to be able to spend over a £1000 on a home cinema system, but don't worry, there are cheaper options out there. This 5.1 channel system from LG comes with three satellite speakers, two tallboy speakers, a subwoofer and a DVD system to offer a complete home cinema system for less than £200. One of the most startling things about this system is that there's a distinct lack of wires, so even the most avid technophobe won't have any problems when connecting this up.

£130 | \$200
lg.com

LG DH4430P

This five-speaker package and subwoofer from LG is a cheap way to improve the sound that comes from your DVDs.

Fill the room with sound

One of the better reasons to use tallboy speakers is that they do a good job at really filling the room with sound

Split sound

This gadget is able to split the sound between its different speakers, helping to keep the experience as immersive as it possibly can

USB contents playback

Just plug a USB directly into the system and enjoy free range to load up a stored movie and enjoy its fantastic audio clarity

1071

RAISING THE (SOUND) BAR

4 best soundbars you can buy

Orbitsound A70 airSOUND Bar

Striving for audio perfection will by and large require investment in a soundbar. While they may seem like an expensive purchase at first, they're in fact the perfect solution when it comes to transforming the audio from your TV. Orbitsound have long been at the forefront of soundbar development, with the A70 packing in a complete audio system into a stylish frame that sits below your TV. Plus, the wood construction of the A70 is fantastic at picking up and distributing acoustic sounds.

£500 | \$770 | orbitsound.com

Sonos Playbar

A super sleek soundbar that uses a single optical cord to bring full theatre-style sound into any everyday TV set.

£600 | \$700
sonos.com

Bose Solo 15

This one-piece speaker system connects to your TV and helps add real depth to both your bass and treble levels.

£400 | \$450
bose.com

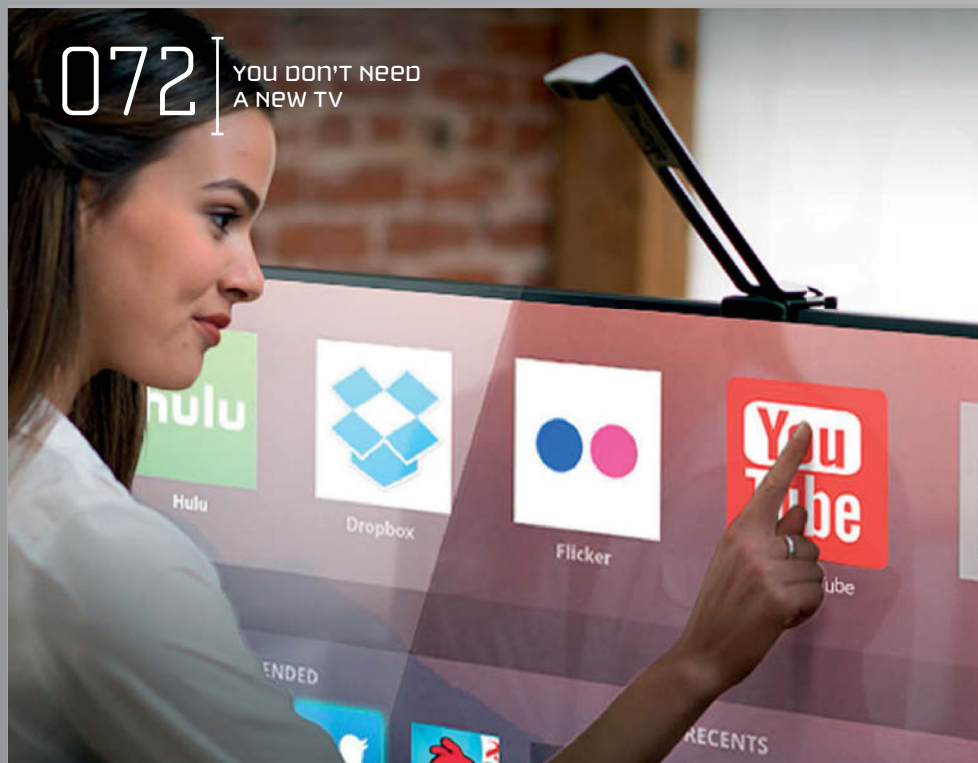
Samsung HW-J550

Samsung's system offers room-filling sound at an exceptionally reasonable price.

£350 | \$380
samsung.com

"Striving for audio perfection will by and large require investment in a soundbar"

072

YOU DON'T NEED
A NEW TV

TURN YOUR TV INTO A **TABLET**

Wish your tablet was 80 inches bigger?

While the technology isn't quite ready for sale, Kickstarter project the Touchjet Wave certainly shows the future of interactive technology. Using infrared signals through a detachable stand that attaches to your TV, the Touchjet Wave brings all the features you'd expect to find in your Android tablet and transfers

onto the bigger screen with full interactivity. Users are able to work on projects, create documents, play the latest games and chat with friends without needing to stream or cast from a mobile device. Don't worry if you have an extra large TV, the Touchjet WaveE supports screen sizes up to 80 inches.

Figuring out inputs

Once a movement has been tracked, the Touchjet WAVE uses a complex algorithm to decipher the speed in which your hands have moved

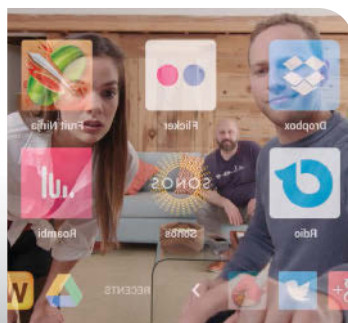


Tracking finger movements

The infrared signals sent through the stand track your hand and finger movements, which in turn are then used as inputs on your TV

Full-gesture support

The tracking system inside the Touchjet WAVE also supports multi-touch and a whole range of programmed gestures to make your TV interactive



FIND HOME PROJECTOR PERFECTION



ViewSonic PJD7830HDL 1080p Home Cinema Projector

A home projector that prides itself on its light-filtering Super Color technology to make streaming in any situation foolproof.

£580 | \$1,150 | viewsonic.com



Optoma X600 XGA

With a simple HDMI-based connection, projecting through the Optoma X600 can take minutes instead of hours to set up.

£1,160 | \$1,420 | optoma.com



Sony VPL-HW40ES

Look past its price and the Sony VPL is the ultimate home projector, packing in a 20w lamp and native 1080p support.

£1,666 | \$2,500 | sony.com



Turn on your imagination

Turn your everyday lighting into an extraordinary experience. Play with colours or sync lights with your music, TV and games for an immersive effect. The possibilities are endless once you start exploring. And with hundreds of apps to choose from, the only real limit is your imagination.

innovation  you

hue PERSONAL WIRELESS LIGHTING



Paint with light



Sync lights with music and movies



Light schedules for home automation



Light for your well-being



Works with
Apple HomeKit

PHILIPS

YOU NEED TO START CARING ABOUT THE iPAD AGAIN

Say hello to the future of tablets

Lets face it, there's never been an ugly iPad. Apple are the pioneers of making techlook cool, while also guaranteeing that the **specification masochists out there are well and truly taken care of.** While the iPad Pro ticks those boxes emphatically, it's also a nod to the future of tablet computing as a whole.

Once you get to grips with the monstrous 12.9-inch Retina display – a feature that Apple are banking on paying off for those who crave a bigger screen – you're left with a whole new chip architecture that promises flawless performance in every situation. It's fast, phenomenally fast even, and whether you like to use your iPad for sketching, staying productive or enjoying a movie or two, this is the tablet for you.

Apple Pencil

This stylus can be anything from a fountain pen to a paint brush

5.6 million pixels

This is the best resolution on the market

Gallery

"It's fast, phenomenally fast even, and whether you like to use your iPad for sketching, staying productive or enjoying a move or two, this is the tablet for you"

Photo alignment

The liquid crystal molecules in the display are perfectly aligned to give better colour contrast

£679 | \$799
apple.com

iPad Pro

Apple's new and biggest iPad yet can also boast to be a trendsetter in the tablet computing market with its blistering performance, stunning design and great overall usability.

076 | YOU NEED TO START
CARING ABOUT THE
IPAD AGAIN

PRO BREAKDOWN

The tech behind the enormous screen

4K made easy

How many tablets can you say sport 5.6 million pixels on their display? Just one: the iPad Pro. Apple's 12.9-inch Retina display makes dealing with 4K video and HDR photos a dream, plus it looks gorgeous

CPU optimising with Metal

Apple's latest technology, Metal, is behind the graphical prowess of the tablet. It optimises both CPU and graphic performance to deliver complex visual effects within movies and AAA games



Clever Speakers

The speakers recognise whether the tablet is portrait or landscape then adjust to give you a balanced sound

Custom timing controller

This is the brains behind the beauty that tells the pixels what to do and when

Third-generation A9X chip

The Pro's bigger size requires an extraordinary chip to keep things ticking. Not only is the third-generation A9X capable of offering perfect performance at all times, it's been designed to tackle multitasking with the utmost ease

It's better with iOS 9

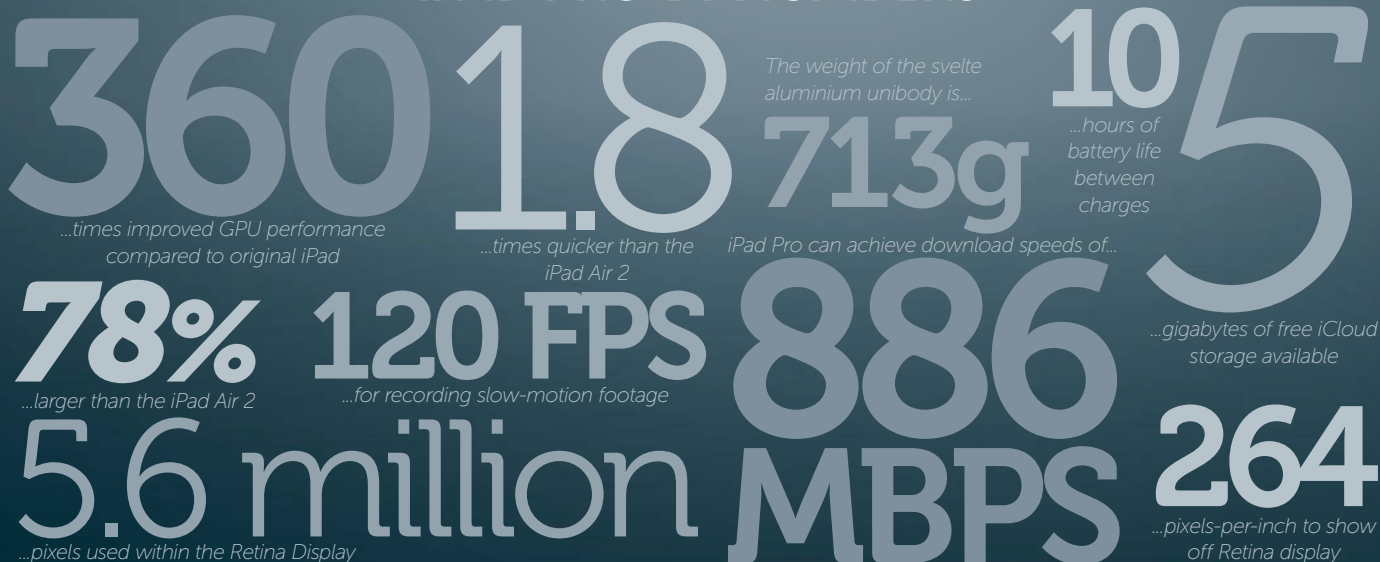
iOS 9 has been designed to be the most intelligent OS yet. Its new capabilities take full advantage of the power of the iPad Pro, with new features like Split View and Picture-in-Picture improving the user experience tenfold

Ten-hour battery life

If you thought that the gigantic size of the iPad Pro would compensate on battery life then you'd be wrong. A ten-hour battery life outshines nearly every tablet and laptop on the market

"This is the brains behind the beauty"

iPAD PRO BY NUMBERS



RECOGNISE THIS KEYBOARD?

You'll never have to type the same way again

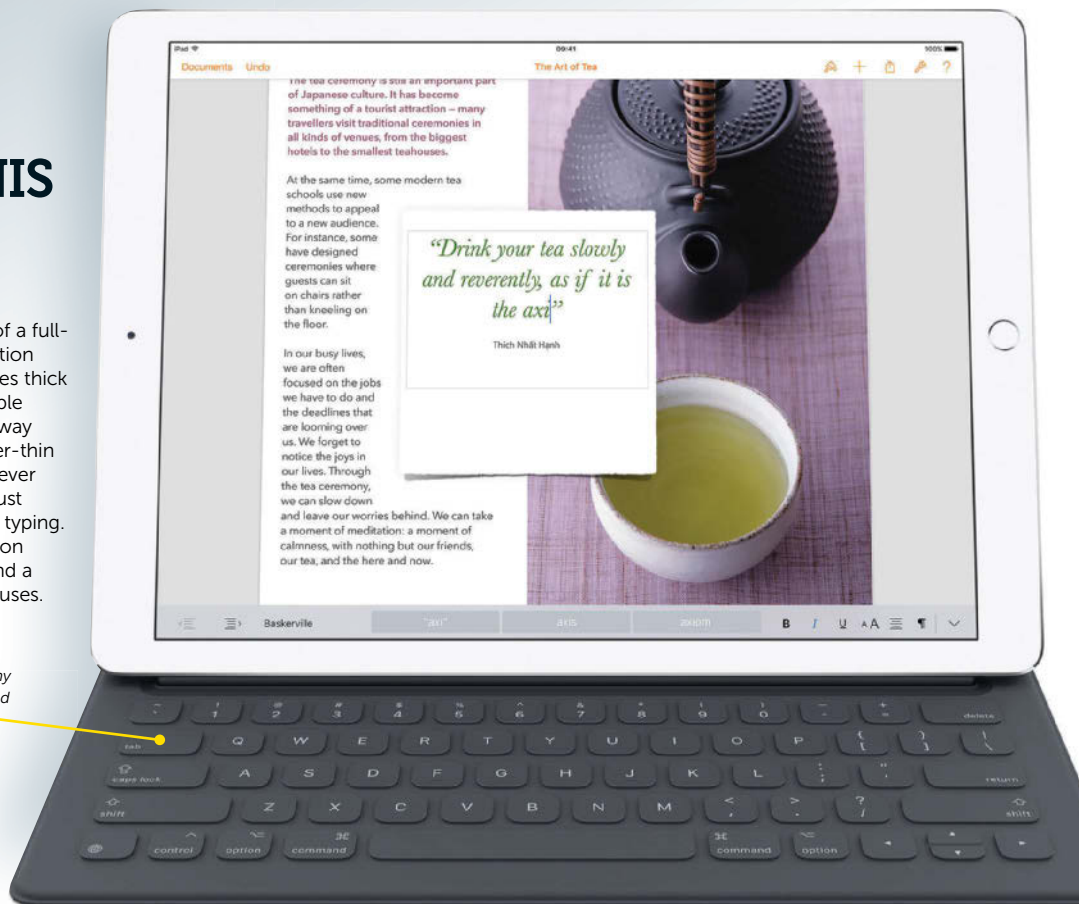
While the Smart Keyboard has the utility of a full-sized keyboard, its uniquely thin construction means it's little more than a few millimetres thick and so lightweight that it's barely noticeable when carrying it around. It utilises a two-way flow of power and data created by a paper-thin sheet of metal and nylon, meaning you never really charge the keyboard. Instead, you just need to attach it to the iPad Pro and start typing. And just as importantly, the metal and nylon combination is robust enough to withstand a lifetime of folding the keyboard between uses.

Gapless keyboard

Unlike traditional keyboards, you won't find any gaps between keys here. It offers a quicker and more responsive typing experience

The all-new Smart Connector

There's no complicated pairing process to be found here. Instead the Smart Connector on the top of the keyboard works hand in hand with the compatible iPad Pro port



THE STYLUS YOU NEVER KNEW YOU'D DESPERATELY WANT

Did they call it a pencil just to be different?

Making use of multi-touch sensors, the Apple Pencil recognises both the pressure you're applying on the display as well as the angle, speed and direction you're writing at. This intuitive system is down to the near-zero latency that can sometimes disrupt how well a stylus works on a capacitive display. To say that Apple has managed to set a new benchmark in styluses would be an understatement for sure. Slip off the tiny magnetic cap that sits at the top of the Pencil and you'll discover a lightning charger, capable of giving the Pencil a complete recharge in less than 30 minutes.

Sensors

The carefully placed sensor can work out how hard you've pressed down on your display, then alter the line thickness

12-hour battery life

Apple claims that it's possible to get 12 hours of battery life between charges, a staggering feat when compared to similar styluses



The large screen makes this tablet so versatile it's great for any purpose

WHAT COMPETITION?

iPAD PRO

Chipset **Apple A9X**
RAM **4GB**
Available memory **32 to 128GB**
Dimensions **305.7 x 220.6 x 6.9 mm**
Display resolution **2048 x 2732**
Primary camera **8MP**

SURFACE PRO 4

Chipset **Intel Core i5**
RAM **8GB**
Available memory **256GB**
Dimensions **292 x 201 x 8.4 mm**
Display resolution **2736 x 1824**
Primary camera **8MP**

PIXEL C

Chipset **Tegra X1**
RAM **3GB**
Available memory **64GB**
Dimensions **277 x 195 x 7.7 mm**
Display resolution **2560 x 1800**
Primary camera **8MP**



078 | get smarter
sound for your
smartphone

GET SMARTER SOUND FOR YOUR SMARTPHONE

Meet the studio amp that fits in your back pocket

If you're someone who really values the quality of your music and hates having to deal with the compressed audio that's pumped out by your smartphone, then you should really be taking notice of Chord's outstanding new piece of hi-fi kit.

A sleek, portable, but still staggeringly powerful headphone amp, the Mojo aims to provide you with studio-quality sound at a (relatively) affordable price. And it's hard to

argue with the results. High-quality music streams full and crisp sound, even on mid-range headphones and while you'll need some fairly serious cans and ideally raw, uncompressed audio to really make the most of it, the Mojo will make pretty much anything you throw at it sound better.

The price puts it firmly in the enthusiast category – the Mojo is aimed at budding audiophiles and aspiring producers – but if

you're the sort of person who subscribes to Tidal and likes to do a bit of DJ-ing on the side then it's a worthy investment.

It won't transform your MP3 files into immaculate lossless files, but it will improve your listening experience on the go and be something to boast about to your friends. For anyone seriously working with audio, the Mojo is tough to beat as an introduction to professional-grade hi-fi equipment.

WHY YOUR MP3S SOUND BAD

Understanding the science of compression

There are a few reasons your standard MP3 or AAC audio files don't sound as good as they should, but it all boils down to compression. Compressing music files makes sense, especially when streaming as nobody wants to have to deal with 50MB songs when they're on a shaky 3G connection. However, narrowing the dynamic range of a file (that's reducing the volume of loud sounds and amplifying quiet ones) to make it smaller means you end up losing many of the finer details.

£399 | \$599
audiovisualonline.co.uk

Chord Mojo

A pocket-sized headphone amp that offers studio-quality sound for your PC, Mac and iOS or Android smartphone for just a fraction of the price of comparable technology.



TUNE IN

Rob Watts, Mojo designer, discusses the making of the amp

What was the biggest challenge you faced when shrinking down the Chord Hugo's technology for the Mojo?

It's all about power. We wanted Hugo sound quality, but with a smaller size unit, it meant reducing power for two reasons – battery life and thermals – a small box means less power dissipation. Every megawatt of power within Hugo was analysed, and reduced – except for when it had an impact on sound quality.

What was the inspiration behind the illuminated 'bubble' buttons?

This came from John Franks, Chord's CEO, who designed the exterior. He's been using backlit power switches on Chord power amps for some time.

Are there any features you would have liked to include in the Mojo but couldn't?

We will be offering plug in modules in the future to add extra features, so watch this space!

How important was it that the Mojo was manufactured in England?

From a quality assurance point of view, essential. But from a sales position also very important; China is our biggest single market, and [Chord] being made in England is extremely important to them.

Works across devices

Whether you have an iPhone, Android, Mac or PC, the Mojo will give you the sound quality you're looking for

Dual headphone jacks

The Mojo sports a pair of 3.5mm outputs so you can listen with a friend. The sound quality doesn't degrade with two people plugged in either

Charge it up

You can charge the Mojo via any USB port. You'll also get a solid 10 hours of listening time on a full battery

Traffic light buttons

Sporting a minimal, colourful interface, the Mojo manages to get everything done with just three illuminated buttons. You can even adjust the brightness of them

Tough metal body

The Mojo uses aircraft-grade aluminium for its casing so you don't need to worry about scratches or dents as this thing is very durable

Inputs galore

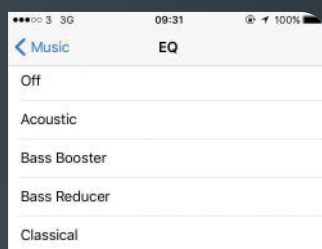
Plug in your music-playing device via a USB, Optical or Coaxial cable and you're immediately good to go. The Mojo keeps things simple and streamlined

3 ways to boost your Apple Music sound quality



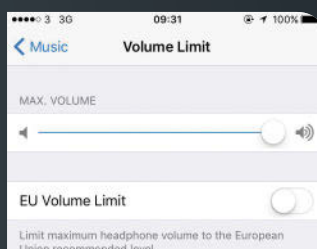
01 Turn on High Quality

Audio quality is automatically lowered on mobile to save data.



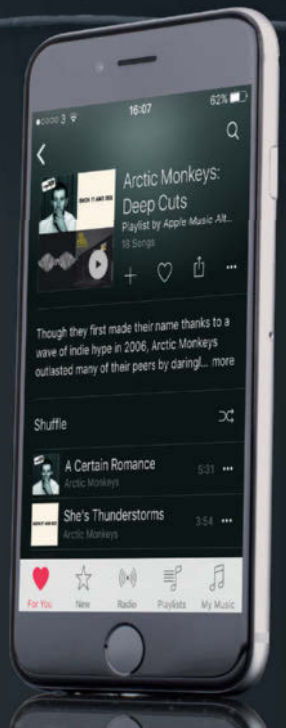
02 Tweak EQ settings

There are dozens of equalisation options tailored to different genres.



03 Adjust volume limit

Remove the cap on your max volume, but beware of distortion.



080

SAY GOODBYE TO CLEANING WITH THESE ROBOT BUTLERS

Sit back, relax and let robots keep your house clean



Suck it up

Two brushless rubber extractors with a specially designed tread pattern spin in opposite directions. This creates a sealed channel that concentrates the airflow, which in turn sucks up more dirt



Self control

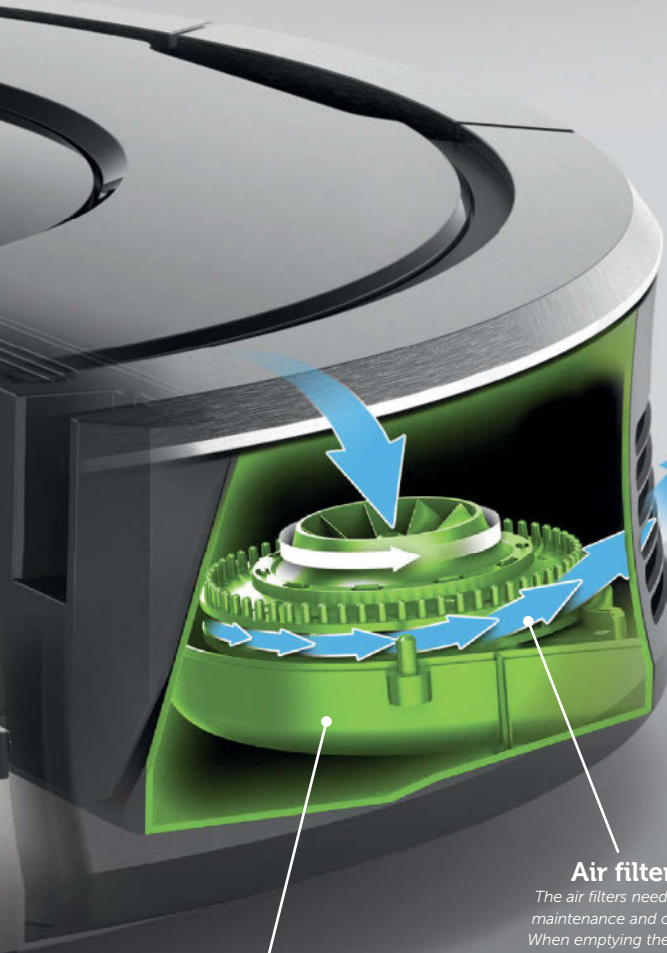
The integrated clock allows for seven-day scheduling. Simply pick a time and date and the Roomba will automatically clean. When finished it will return to its base to recharge



THIS ROBOT SUCKS

In a perfect world a room would have **four straight walls, perhaps in the future they will.** But back in the present the Roomba vacuum cleaner bot has to contend with all angles as it kickstarts into life. Every time it encounters an obstacle its integrated light-touch bumpers tell its sensors that it needs to change direction. While zipping across carpet, or hard floors, the Roomba automatically sucks up all dust and dirt

via its brushless cleaning. All manner of debris makes its way into the bin. Dust and dirt sensors seek out areas that have yet to be cleaned, little is left behind. For near total autonomy the Roomba can be scheduled to perform a cleanup as the same time everyday before reporting back for duty as its base recharging station. This is a robot that does what it says on the tin and has a lot in common with the equally impressive Scooba.

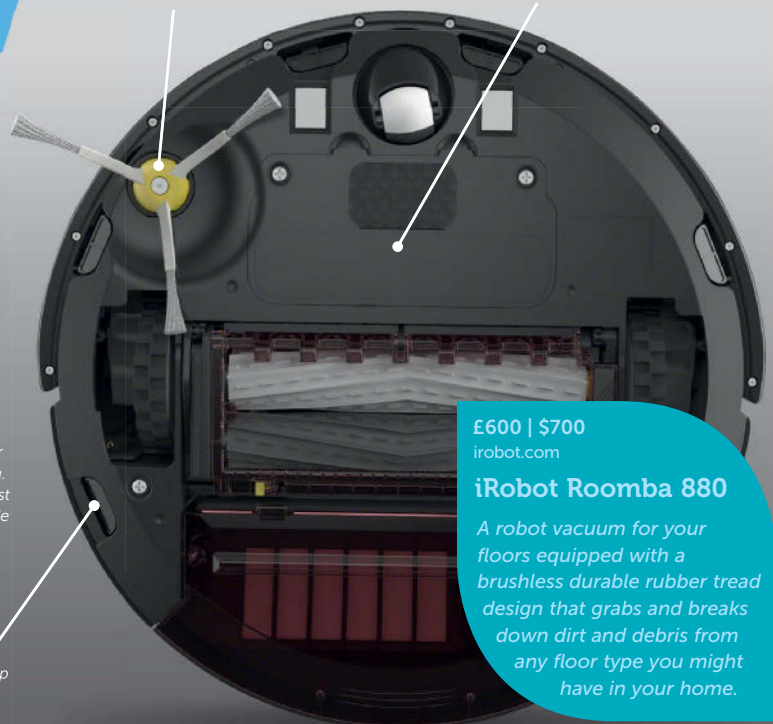


Cleans to the edge

Dust and dirt hidden away at wall edges has nowhere to hide. A spinning 3-pronged side brush pushes out any debris, which is then swept into the path of the Roomba's extractors

Dirt detector

Roomba uses its Dirt Detect Series 2 technology, a set of optical and acoustic sensors, to find dirt and debris and perform concentrated cleaning in the areas where it's needed most



Air filters

The air filters need regular maintenance and cleaning. When emptying the bin, just tap the Roomba on the side to clean them

Spot the dirt

The brand new spot option is a great way to target particularly small areas in need of a deep clean

Cliff sensor

The clever cliff sensors stop the Roomba from falling over edges, such as stairs

£600 | \$700
irobot.com

iRobot Roomba 880

A robot vacuum for your floors equipped with a brushless durable rubber tread design that grabs and breaks down dirt and debris from any floor type you might have in your home.

082

SAY GOODBYE
TO CLEANING WITH THESE
ROBOT BUTLERS

Talk back

Need to know what is your robot doing? The information button offers audible cues. Press the button and a voice will tell the user that it has finished its cycle and its tanks need emptying and battery recharging

THROW OUT YOUR OLD MOP AND BUCKET

There's no need for dirty knees when the Scooba is about. It sweeps, pre-soaks, scrubs and sucks up the dirty water into its two compartment tank. Before the robot takes over it's the human touch that is called into action. Warm water and the included hard floor solution are mixed and added to the tank, ready for action. The Scooba kicks off in a circular motion, sweeping and placing solution onto the floor before

heading to the edges of the room. Soft touch bumpers direct the unit round the edges to complete its first pass across the floor. The Scooba goes back for another pass around the room with its scrubbing brush that loosens up any grime for a final pass when the squeegee vacuum sucks up the dirty water. Voila! You now have a clean floor. The beauty of the Scooba is that it does thoroughly clean a floor, unlike the Braava.

CLEAN HARD FLOORS WITH INDOOR GPS

Indoor GPS

The NorthStar Navigation cube projects a signal onto the ceiling and down to the unit. This determines its location and builds up a virtual map of the room so it knows where it has been and where it needs to go



Hard floors aren't hard to keep clean but they do need love and attention to stay clean. The iRobot Braava is a simple creature in principle, using a cleaning head with a microfiber cloth. It offers two options, one for dry mopping and the other for the more traditional damp mopping. The dry mop option simply goes forwards picking up dirt and debris. The damp mop mode uses water

and cleaning solution, with its cloth to clean the floor.

The Braava doesn't have a set of soft-touch bumpers like the Scooba and Roomba, but it uses the NorthStar Navigation System. This acts like an indoor GPS and maps out the room it is currently in. This tells the Braava where it has been and where it still needs to go to finish its cleaning cycle.

iRobot Braava 380 £280 | \$300 | irobot.com

£600 | \$600
irobot.com

iRobot Scooba 450

The sister to the Roomba, the Scooba is a robot that scrubs floors clean via a three-way process. It sweeps, soaks and scrubs and vacuums to leave a spotless and germ-free floor.

Time for change

A set of strong magnets hold the cleaning head in place. The dry mop head uses a push in grip to hold its microfiber cloth. The damp mop head uses Velcro to hold its cloth in place

Stay clean

A dual compartment tank is used in the cleaning process. One tank contains fresh water and solution. This is applied to the floor while the brush rotates at 600RPM as it scrubs the floor. Dirty water is sucked up into the second tank providing a cleaner and more sterile finish

5 ROBOTIC CLEANERS



He's got his 360-degree eye on you

The 360 Eye is another smart invention from Dyson. It is a vacuum cleaning robot that uses a panoramic lens to get a 360° view of the room. This uses complex maths to triangulate its position. This in turn helps determine where it has been and what is left.

Dyson 360 Eye
£750 | \$1,250
dysoneye.com



Your robot can clean when you're away

A smarter-than-most vacuum robot due to its ability to be controlled via the companion app. The user can set the robot to clean from almost anywhere. The unit boasts two brushes and combines a curved and straight edge design for corner cleaning.

Botvac Connected
£555 | \$850
neatorobotics.com



How the Scooba scrubs-up



01 Clear the floor!
To begin, the Scooba sweeps up any loose debris and covers the floor in a thin gloss of water.



02 The scrubbing brush
The intense scrubbing brush spins at 600 rpm while the squeegee vacuum sucks up the dirty water.



03 Squeegee clean
The squeegee vacuum performs one final suction to get rid of the last dregs of water and leave the floor perfectly clean.

Sensible sensors

The Scooba is for cleaning hard floors. A selection of built-in sensors detect when the surface changes eg carpet and avoids. Cliff detection sensors ensure that the Scooba stops when a sharp drop is encountered

Bumper protection

Obstacles are everywhere and a light-touch bumper system senses obstacles. When the bumper touches an obstacle it will stop and turn/reverse and repeats the process until the obstacle is avoided



The ME770 is no one-trick pony

The ME770 is a multi-talented hybrid robot that vacuums and mops. It boasts a 460cm squared microfiber mop and a 150cc reservoir to supply moisture for up to 3 hours. The unit can vacuum, mop or combine the two for its hybrid cleaning option.

Moneual ME770 Style
£525 | \$808
moneualusa.com



Is it a Furby or a Gremlin duster?

This little 'Gremlin' is a manic fluffy robotic duster that is powered by AA batteries. It is surrounded by a pink microfiber fur coat that rolls around attracting dust and dirt. The coat is machine washable and best suited to wooden and vinyl floors rather than carpet.

Mocoro Robot Cleaning Ball
£25 | \$39
firebox.com



Suction cup Spider-Man

No need for a ladder with the Winbot window cleaning robot. It uses a combination of suction pads, tank-style tracks and cleaning pad to clean windows. A selection of sensors identify obstacles and make the W930 turn and change direction to reach into all corners.

Winbot W930
£325 / \$500
ecovacsrobotics.com

On the move

To move the Looj 330 through a gutter's dirt and debris a pair of rugged, flexible and waterproof polymer treads provide the traction needed to get the job done



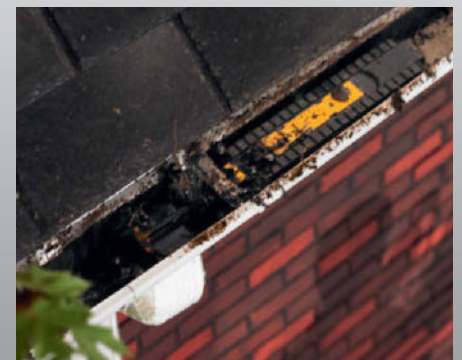
Super spin

The cleaning auger is made up of four ejector components. There are two paddles and two wire brushes which spin at 500rpm to blast debris away from the house.

THE ROBOT GUTTER-RAT

If there is ever a job where a robot is needed then cleaning gutters is surely it. You still need to climb a ladder to pop the Looj in position, but once there the robot will do the rest. The Looj is a three-part unit, it has the body with its tank tracks which drive it along. The detachable carrying handle also doubles up as a remote control and finally there is the cleaning auger. This is the key cleaning component and has two rubber ejectors and two nylon brushes. The spins at high speed removing dirt, leaves and any other debris from the gutter. It's a simple robot, arguably the simplest of the iRobot range, as there are no sensors or bumpers needed to achieve its task. The remote control offers manual interjection allowing the operator to choose spin direction and forward or reverse, nothing more, nothing less. Alternatively, just hit the Clean button and go and make a cup of tea.

iRobot Looj 330
£200 | \$300 | irobot.com



HOW TO TAKE PICTURES ON YOUR iPhone THAT *DON'T* SUCK



Plug the DxO One into your iPhone and take shots like a pro

Manual options

Pick from auto and scene modes, or take control and go manual. Settings like shutter speed, aperture and ISO are controlled on the left

Go further

To the right you have options for different file formats (SuperRaw, Raw or JPEG). You can also set a timer and change the flash settings

In the picture

For selfies, connect the DxO One with the lens facing you then press the shutter. The app flashes a peach screen for flattering results



Instant colour

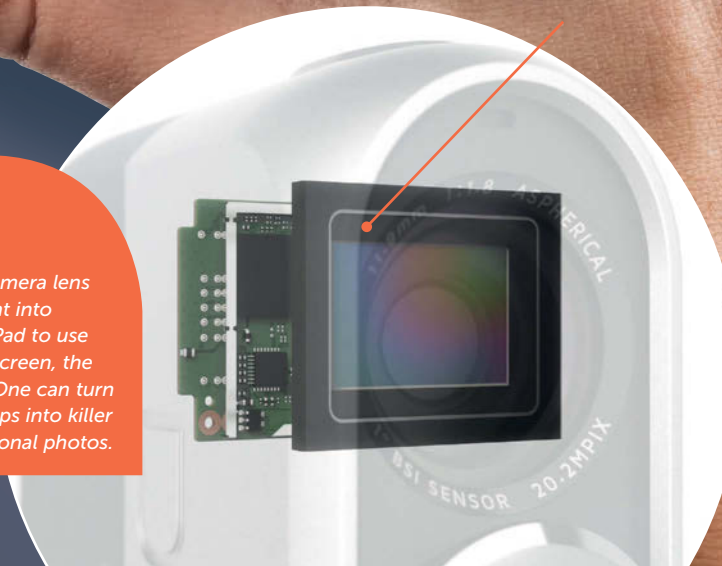
The DxO's advanced image processing brings instant colour and detailing to any pictures

Tired of shoddy snaps that you have to disguise with an Instagram filter? If you're after quality without the bulk of a DSLR, the DxO One could be your next breakthrough. This tiny camera connects to your iPhone via the lightning connector and uses your device as the screen. It's incredibly compact yet packed with high-end features, including an f/1.8 32mm equivalent prime lens that gives you a wide view whilst letting you capture awesome blurry backgrounds. It also has a one-inch 20.2MP CMOS sensor to capture high-resolution images that you can instantly share. You need to use an app to control the manual options, such as shutter speed, aperture, ISO, white balance and more. DxO even has a SuperRAW option, where it takes four images with one click then compresses them into one RAW file to maximise detail. According to DxO's imaging specialists, the quality you'll get is on par with many DSLRs – check out our graph to see how it holds up against some of its bigger brethren. With this device, you'll never have to sigh about your bad pictures again.

£450 | \$600
dxo.com

DxO One

A high-quality camera lens that plugs straight into your iPhone or iPad to use the device as a screen, the portable DxO One can turn your dull snaps into killer professional photos.



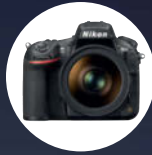
How does it compare?



DxO One



Canon EOS 750D



Nikon D810

SENSOR TYPE		
13.2 x 8.8 mm CMOS	22.3 x 14.9 mm CMOS	35.9 x 24 mm CMOS
EFFECTIVE MEGAPIXELS		
20.2MP	24.2MP	36.2MP
DXOMARK SENSOR SCORE		
70 (85 in SuperRAW Plus)	71	97
VIDEO RESOLUTION		
1080p at 30fps, 720p at 120fps	1080p at 30fps, 720p at 60fps	1080p at 60fps, 720p at 60fps
SHUTTER SPEED		
15-1/8000sec	30-1/4000sec	30-1/8000sec
ISO		
100-51200 (Hi 2)	100-12800 (expandable to 25600)	64-12800 (expandable to 32-51200)
CONNECTIVITY		
Lightning port, USB 2.0	Wi-Fi, NFC, Hi-Speed USB, HDMI mini, 3.5mm Stereo mini jack	USB 3.0 Super Speed, Type C HDMI, 3.5mm Stereo mini jack
FILE FORMATS		
.JPG, .DNG, .DXO(SuperRAW), .MOV (H.264)	.JPG, .CR2, .MP4 (H.264)	.JPEG, .NEF, .MOV (H.264/MPEG-4)
BATTERY LIFE		
Approx. 200 photos	Approx. 440 photos	Approx. 1200 images
DIMENSIONS		
26.25 x 67.5 x 48.85 mm	131.9 x 100.7 x 77.8 mm	146 x 123 x 81.5 mm

GET CONNECTED

01 Release the connector

To reveal the lightning connector, you simply slide down the lens cover to turn the camera on then push the cover down a little further until the connector flips out

What is a DxOMark score?

DxO has a specialist lab that tests camera sensors to see how they compare with each other. See their full list at dxomark.com

02 Push it

It's ridiculously easy to now make the DxO One and your iPhone attach to each other – just push the lightning connector into the port and voilà

03 Break it off

You don't have to worry too much about the connection snapping as it's designed to automatically break away if too much force is put on it. An essential feature if you're quite clumsy with technology

You can ditch the manual when trying to work out how to hook up your iPhone to the device, as DxO has made it fool proof. Just push the gadget down to connect and you'll be on your way to taking better shots.



"Turn your dull snaps into killer professional photos"

THE RESULTS AT 100% ZOOM



DxO ONE



iPHONE 6



THIS IS PRETTY MUCH THE ONLY KITCHEN GADGET YOU'LL EVER NEED

Take the heat out of cooking and cheat your way to a Michelin star with this all-in-one processor

Cooking is getting more complex and it's getting to the stage where your friends won't be happy with frozen food warmed up, instead they expect you to turn magically into Heston Blumenthal. Freshly cooked food is the only way to go now, and while that might sound like a chore at first, there are easy ways of getting around the hassle of home-cooked food every day.

The Tefal Cuisine Companion is a new type of food processor that not only prepares your food like a conventional processor (chopping, blending and so on), but also *cooks* it for you. Consequently making the hardest of recipes easy. But where a lot of processors can only slow cook, the Cuisine Companion lends itself to more international dishes too, thanks to its ability to cook with steam (for those deliciously

spicy Asian dishes), whisk (for Italian pasta sauces), knead (think Mediterranean breads) and even prepare desserts!

The Cuisine Companion boasts its ability to help you prepare *one million* menus worth of food by combining the recommended 300 recipes that come in the box. Perfect for feeding even the fussiest of kids or the most demanding of parents that come to visit.

RECOMMENDED RECIPES

Our pick of the 300 dishes the Cuisine Companion can cook up



STEAM: Dumplings

Make sure you have lots of cling film handy for dumpling dishes – wrapping them up beforehand ensures the mixture stays compact as the steam seals the film during the cooking process.



SOUP: Pea soup

Once your vegetable preparation is done (in about two minutes), the Cuisine Companion's ultrablade knife will practically make the soup for you at the touch of a button. Easy peasy.



SAUCE: Low-fat mayo

The 12-speed settings on the mixing bowl are perfect for combining different elements of a mayonnaise so you can end up with the restaurant-perfect consistency every time.



BREAD: Pretzels

You'll only be using the Cuisine Companion for about three minutes on the pastry setting, but it's vital to submerge the cooked pretzels in boiling water for five seconds to retain their shape.



SLOW COOK: Thai curry

By cooking the onion in any curry dish or 10 minutes before you add the rest of the ingredients into the mixing bowl, you can guarantee the distinct flavours are released and don't become overpowering.



DESSERT: Custard tart

Though the machine can prepare this dessert in around 40 minutes, you're going to want to leave it about a day between completion and eating; that way, the taste and texture have time to mature.



FUTURE SAVINGS

10 appliances the Cuisine Companion replaces

STEAMER

Average price: £30/ \$45

ELECTRIC WHISK

Average price: £20/ \$30

RICE COOKER

Average price: £40/ \$60

PASTA MAKER

Average price: £55 | \$85

HAND BLENDER

Average price: £25/ \$40

FOOD PROCESSOR

Average price: £75/ \$115

SLOW COOKER

Average price: £25/ \$40

PRESSURE COOKER

Average price: £55/ \$85

BLENDER

Average price: £90/ \$140

BREAD MAKER

Average price: £110/ \$170

TOTAL SAVING:

£525 | \$810

Tender meat

By applying a small amount of heat through the metal cooking pot, the Cuisine Companion's in-built slow cooker gradually breaks down the fibres in cuts of meat, giving them a tender taste without hitting your electricity bill the way a full-powered oven would

Knead to know

By combining water with yeast, flour and whatever else you fancy in order to make different types of bread, the kneading or grinding tool that comes with the Cuisine Companion agitates the mixture enough to produce an even and consistent dough (perfect for pizza bases)

Let off some steam

After pouring water into the base, the device heats it up enough to channel steam into a separate compartment where it heats the food. You can alter the pressure of this chamber for faster or slower cooking times. It's the healthiest way to prep veg

Mix it up

You can make your own version of typically shop-bought sauces (mayonnaise, cheese sauce, stock) with ease in the Cuisine Companion thanks to the ultra-speed chopping settings in the machine: the blades whirl so quickly that they can break down and liquidise practically anything to turn it into a sauce

£700 | \$1,080
tefal.co.uk

Tefal Cuisine Companion

Offering nearly limitless functionality, the Tefal Cuisine Companion was made in France by tech-savvy engineers that know food better than most.

Tefal
Cuisine companion
Made in France



088 | YOU DIDN'T KNOW
SKI GOGGLES
WERE THIS COOL



Recon's Snow2 is a next-gen HUD
built to help you tackle any rough terrain



YOU DIDN'T KNOW SKI GOGGLES WERE THIS COOL

Recon Instruments made heads-up displays (HUDs) long before Google Glass made wearable technology part of the mainstream conscience. The Canadian company has cleverly focused on the winter sports market. Its flagship alpine model, the Recon Snow2, is a HUD that has specifications you'd expect from a modern day smartphone and performance to truly transform your experience on the mountains. At its core is a 1GHz dual-core chip that's accompanied by 1GB RAM, all helping to power a bright 14-inch HD display that utilises the latest wireless connectivity tech, more sensors than a life-support machine and a 1,200mAh battery promising more than six hours of charge.

All of this is packed inside a HUD that weighs just 65 grams. It's all mightily impressive stuff if you're a fan of listing specs, but this all sinks in comparison to what the Snow2 is really capable of. This HUD ensures all the information you could possibly need as you hurtle down a black run is just a glance away. There's your speed and distance, as well as altitude and vertical drop stats. You can view maps and track your friends; it even pairs with your smartphone. Skiing just got a whole lot more Iron-Man!



Inside the Recon Snow2

Sense the slope

Recon has packed the Snow2 with a comprehensive set of sensors (accelerometer, gyroscope, magnetometer) to ensure downhill slalom and daring 1080 jumps are accurately detected

A smartphone in a headset

There's Bluetooth 4.0 technology onboard so you can seamlessly connect to any compatible smartphone. Then you can view calls, text friends and even control your music

£210 | \$400
reconinstruments.com

Recon Snow2

Next-generation GPS heads-up display (HUD) for alpine sports, labelled as the world's most powerful wearable computer and designed for the harshest of conditions.

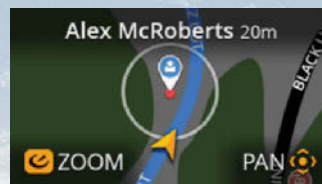
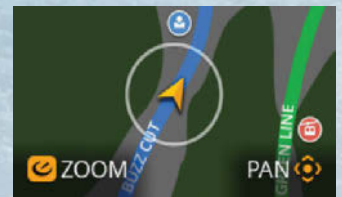
Spy camera

Snow2 sits in the bottom-right corner of your view for full 84-degree visibility, like Arnold Schwarzenegger's spy glasses in *True Lies*. The optic illusion appears to show a 14-inch image from five feet away

Here's what appears on screen

Always know where you are

You'll never find yourself going dangerously off piste with the Snow2 as your companion. There are more than 600 resort maps preloaded and packed with useful points of interest like lodges and lifts.

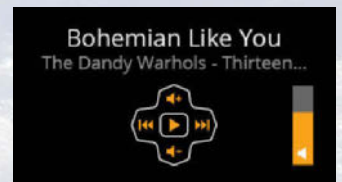


Keep track of friends

No, not in a creepy way. If you're mates download Recon's Engage app for their smartphone, you can all see your GPS position loaded on the HUD. Just be sure to meet in the bar after.

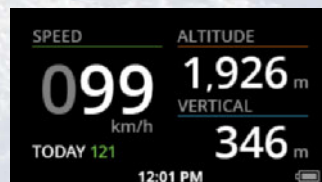
Boast to your friends

No piece of modern day tech is worth its weight in gold without the ability to post a boastful Facebook message to celebrate your achievements. Snow2 ticks that box.



The need for speed

Think you know how fast you're going? Well now you know for sure. Thanks to the super-accurate GPS sensor and barometric pressure data, Snow2 tells you when you're breaking the land speed record.



DJ on the slopes

Maybe not something we should encourage, but if Adele's 'Hometown Glory' comes on when you needed a bit of AC/DC to power down the final stretch, you can use the remote control to skip tracks.

HOW THE HUD WORKS

A HUD is any transparent display that presents its user with a range of data without needing them to look away from their normal line of vision. They are most famously used by fighter pilots...

Is it a hologram?

The most important part of a HUD is the projector that superimposes a visual layer over reality. In the case of the Snow2, that visual layer lives in the bottom-right corner

Clear display

Even though the fake layer is so close to your eye, it is perfectly readable because it is directly in front of your view. Recon's Snow2 uses a high contrast display to make it even clearer

Picture-perfect focus

To reduce eye strain and enable the user to comprehend the information on the display quicker, HUDs like the Snow2 display the data at infinity focus, the optimal focal point

090|

HOT GEAR FOR YOUR WINTER BREAK

Hitting the slopes?
Take your gadget
addiction with you with
these cool products



BE SAFE WITH ABS AVALANCHE PROTECTION

An ABS Vario base with an 18 litre zip-on pack is practical and might just save your life if you're caught in an avalanche. Two airbags in one provide additional protection and the base pack has enough room for a probe and shovel too. If you like to go off-piste, you need one of these!

ABS Vario Base Unit + 18l Zip-on
£499 | \$734.91 | abs-airbag.com



GET BEATS IN YOUR WINTER SPORTS HELMET

The POC Receptor bug looks awesome and is super-safe too, with its dual-overlapping shells for sharp object protection, closable vents and an EPS liner. Add in the communication neck roll accessory for Beats by Dr. Dre speakers and a microphone that connects to the 3.5mm port on your phone and you've got a very multipurpose device.

POC Receptor Bug
£172 | \$264 | pocsports.com





THESE SKI BOOTS ACTUALLY LET YOU WALK

Ski boots are traditionally a necessary evil, but the MC-X support boots use Vibram soles, dual boa reels and custom-moldable liners for a perfect walking or hiking fit and snap into an open chassis when you are ready to ski. Navigating stairs in the bar will never be the same again!

Apex MC-X Ski Boots

£467 | \$716

apexskiiboots.com



OWN THE POWDER (AND THE ICE) WITH A GNU BOARD

Rock all terrain and freestyle (or freeride) on the mountain with the Smart Pickle, hand built in the USA. Flat to mild cambers combined with a rocker between the feet make the Pickle super versatile, together with Mervin's famous magne-traction for grip on very icy pistes. The sintered base holds onto your wax for peak performance.

GNU Smart Pickle

£410 | \$500 | gnu.com

FORGET GAME STREAMING, PISTE STREAMING IS IN!

There are plenty of video recording helmets and glasses around, but the Model 339 takes things a step further. With Wi-Fi connectivity for live streaming to smartphones and tablets, it's perfect for framing a jump or trick! A 135-degree wide angle lens catches all the action in 1080p (30 fps) or 720p (60 fps HD video).

Liquid Image MODEL 339 - APEX HD + WIFI

£260 | \$400 | liquidimageco.com



RECORD YOUR RUNS WITH THE SMALLEST AND LIGHTEST GOPRO

Recording your runs (or wipeouts) is fun, but having a huge GoPro on your helmet can make you look a tool (and be a pain on lifts). Fifty per cent smaller and 40 per cent lighter than other Hero4 cameras, the Session can record in 1440p (30 fps), 1080p (60 fps) or 720p (100 fps) video and can snap 8MP stills.

GoPro Hero4 Session

£250 | \$300 | gopro.com



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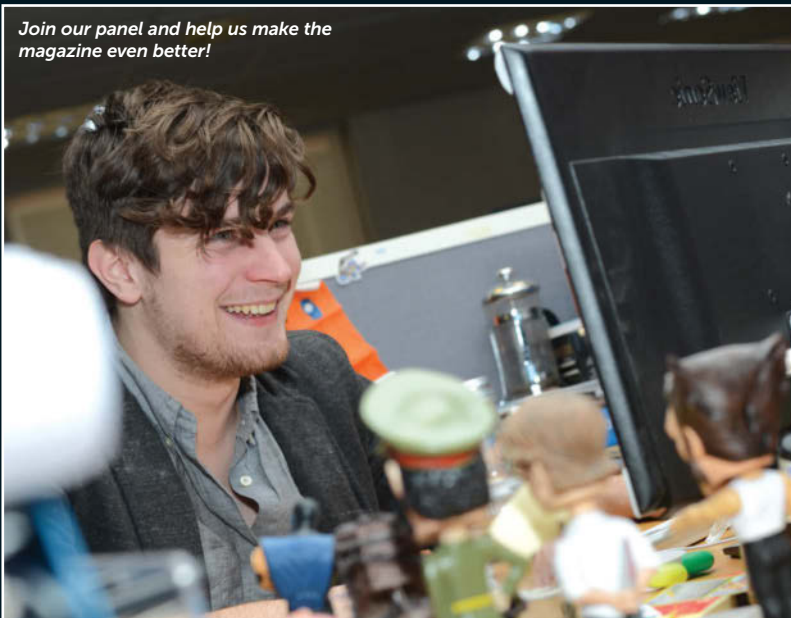


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Jack Parsons
Editor



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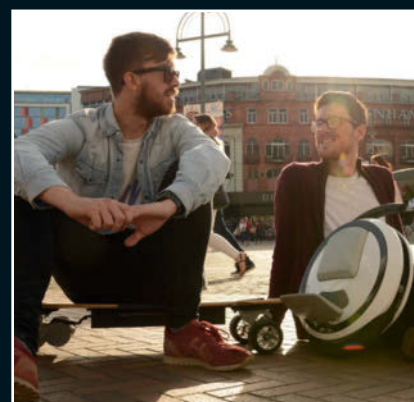


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DRINK (RESPONSIBLY) LIKE A PRO

The best gadgets for getting the most out of your booze

Everyone loves a drink – there's no arguing with that; from beer to wine to spirits to cocktails, the culture around alcohol is as essential to us as food. Yet our attitude to alcoholic beverages doesn't just stop at enjoying a pint down the pub.

From making sure your lager is served with the right amount of head and fizz to ensuring you're mixing vodka with the right kind of cola, there's a defined science to drinks and mixology. Wine, for example, can have its taste drastically altered depending on the temperature at which it's served: white wine, if taken out of a standard household fridge, is usually too cold. Who knew, right? Red wine, likewise, isn't always best presented at room temperature as popular opinion suggests. It sometimes wants to be a little warmer, especially if you're drinking an African grape, a Cotes Du Rhône or a good Claret. Finer, more delicate reds (think Pinot Noir, or young Burgundies) generally benefit from half an hour in the fridge prior to drinking – bringing them down to that sweet spot somewhere between 14 degrees and 18 degrees Celsius.

If this is all getting a bit complex then don't worry, there are, as always, a variety of gadgets that'll make anyone out there look like a seasoned sommelier.

£20 | \$30

sonicfoamer.com

Sonic Foamer

A small platform you can place your beer glass on to reinvigorate the bubbles and give it the carbonated fizz that might have diminished since you poured the drink.



"Wine can have its taste drastically altered depending on the temperature at which it's served"



£15 | \$30
amazon.com

Vinenco Wine Chiller

A mixture of a wine pourer, aerator and bottle cooler, the Vinenco Wine Chiller is a nifty rod that slips into the neck of a bottle to reduce drips and spills. This means fewer drunken mistakes.

£270 | \$300
coravin.co.uk

Coravin 1000 Wine System

Fitted with an argon gas canister, the Coravin can access, pour and store wine without removing the cork using inert gas to keep the wine fresher for longer.

Pourer

Pouring this might not have an impact on how wine tastes, but it prevents mess, and when it comes to red wine, that's invaluable

VINENCO WINE CHILLER

Add extra texture to even a cheap bottle of vino

We loved this chill rod – at first glance, we thought it didn't make too much difference, especially to white wine. But after comparing a bottle of regularly chilled wine with a Vinenco-chilled one, we *definitely* noticed a difference: the temperature is brought down via convection from the steel rod and as it cools the wine breathes. We drank this with dry whites (Sauvignon Blanc, typically) and it notably opens up the more aromatic notes in the wine's palette. Don't underestimate the rod's worth on heavier reds either: pop it in half an hour before drinking and you'll *really* notice how much texture even cheaper supermarket wine can have.

Steel rod

By freezing the rod first, you let it slowly chill the wine around it, bringing down the temperature to an ideal level that fridges tend to miss by cooling too much

Aerator

By letting air into the bottle, the wine is oxidised (activating more desirable compounds in the liquid) and negative elements are evaporated

"The temperature is brought down via convection from the steel rod"



Head

As the head is formed at the top it brings the more delicate aromas and tastes of the brew to the surface – foaming activates the more subtle notes of most beers

Body

Some glasses come with widgets on the bottom that achieve a similar effect by activating particles in lager or beer – think of those as analogue counterparts to the Sonic Foamer

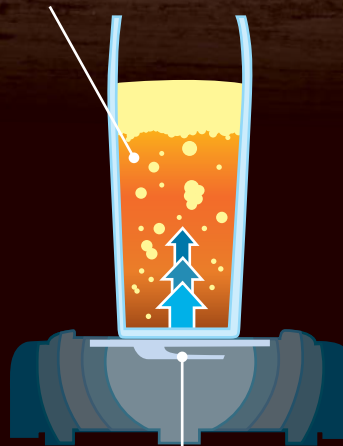
SONIC FOAMER

The cheat's way to get the perfect head every time you pour a pint

If you're under the impression that getting a big head on your beer isn't a good thing, you're not alone – it's commonly believed in bars that you want to get the smallest head possible. (Because you want to get *all* the beer you pay for, right?) Thing is, when you're pouring out of a bottle or a can, a lot of the beer's natural texture can get lost – aluminium cans absorb oxidising elements, whereas glass bottles require pressurising too much and affect the overall texture. So the Sonic Foamer (remarkably easy to use, just hit a button and off you go) acts like a sparkler that you'd get on the end of a draught line. It's good, but weak – we found it necessary to use the Foamer two-to-three times per pint.

Bubbles

The Foamer makes ultrasonic sound at such a wavelength that perfectly sized bubbles are formed to produce a creamy head on beer (or a frothy one on lager)



Basin

By pouring two teaspoons of water in the basin, you create a channel for the ultrasonic sound the device emits to pass through



MORE GADGETS FOR DRINK LOVERS

Know how cold your wine is

It's always important to know the precise temperature of your wine – especially if you want to get the best taste out of it. Sticking this to your bottle ensures you'll always get the best taste.

Vignon Wrap Around Wine Thermometer
£27/\$35
wineware.co.uk

Minimise the risk

Manual screwdrivers serve a purpose, but no matter how good you are at popping those stoppers, there's always a chance you'll cork it. The electric screwdriver minimises that risk and makes sure a good bottle of wine never goes to waste.

Bosch IXO Vino Cordless Lithium-Ion Screwdriver with Corkscrew Attachment
£50/\$112
bosch.com

Add some flair

Want to open your bottle of champagne in the most dramatic way possible? Want to make a statement with your celebratory drinks? Well, why not travel back in time to the 1700s (metaphorically) and pop open your bottle with an actual sabre?

Mathusalem Sommelier Champagne Sabre
£160/\$400
whiskampers.co.uk



Trigger

As the bottle decreases, you'll have to add more gas to the inside of the bottle, replacing the wine you eventually transfer to your glass

Gas

If the wine was extracted, the bottle would crack. So instead the Coravin replaces the wine with an inert gas that gives the wine nothing to react with

Spout

As the wine is poured into your glass, you'll want to tilt the spout increasingly upwards, letting the wine hit the needle and travel to the glass without applying too much gas

Needle

A sharp, thin needle pierces the cork without letting any oxygen into the bottle, consequently preventing the wine from reacting with exterior chemicals

CORAVIN WINE SYSTEM 1000

The perfect accessory to ensure you drink two bottles at a time

Seemingly a superfluous accessory at first, the Coravin is now a favourite in our kitchen. It lets you switch between bottles without having to plug the red wine with some inferior cork. The consistency of the wine you get when drinking

through a Coravin is also more pleasing to the palette, especially if you drink with food. This is because the tastes are more active, meaning flavours bought specifically to be eaten with certain dishes complement textures and tastes.

Enjoy wine without pulling the cork



01 Clasp on bottle

Open the rear clamp before aligning the Coravin needle with the direct centre of the cork or lid. Once done, let go of the clamp so it forms a tight grip around the bottle.



02 Insert the needle

Press firmly down on the top so that the needle goes through the cork. Now turn the bottle and Coravin horizontal to minimise any air getting into your wine.



03 Press and release

Press the trigger on the top of the Coravin in short bursts to start pouring your drink. Make sure to pour near the inside rim of the glass to prevent any splash back.

098 | DRINK (RESPONSIBLY)
LIKE A PRO

WIN A WINE CELLAR

Keep your Chardonnay chilled to the optimum temperature with this state-of-the-art wine cooler from Haier

WORTH
£800



Not only does the Haier WS50GDBI freestanding wine cellar have a polished design that's complete with stainless steel and natural oakwood shelves, it can also store up to 50 bottles and is packed with technology to keep your Friday evening treat perfectly chilled.

In fact, the cooler contains distinct temperature zones so that red and white wine can be stored together at different temperatures. What's more, it has a humidity control mechanism and a variety of preset options to adjust the cooler's core temperatures from five to twenty degrees Celsius. This can be done using an LCD touchscreen, so you don't have to even open the door. You also don't have to worry about this fridge making that usual annoying hum you get from your average fridge, as Haier uses a low-vibration compressor mounted on a silent block to reduce this noise.

To ensure the quality and taste of your wine, an active carbon filter ensures the air inside this premium wine cellar remains pure, consequently making for a clean internal environment. Meanwhile, anti-UV glass is used in the door to protect wine from any ambient light.

No matter if you're a wine enthusiast or someone who just enjoys a tipple now and again, this £800/\$1,544 wine cooler puts all others to shame.

**FOR YOUR CHANCE
TO WIN A HAIER
WS50GDBI ANSWER
THE FOLLOWING
QUESTION**

**HOW MANY BOTTLES CAN THE WINE CELLAR HOLD?
A. 25 B. 50 C. 100**

Enter today at **www.gadgetdaily.xyz**

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BREATHALYSERS

COMING TO A GLOVE COMPARTMENT NEAR YOU

The pocket-sized gadget that's invaluable on a night out

Ever been in that situation where you've been out with your mates at a restaurant, had a few beers and have been uncertain about *just* how drunk you are? How many cabs have you called when you think you're okay to drive, but your friends have begged you to call a taxi instead? Floome minimises the risk of this problem. It bills itself as the most accurate breathalyser on the market and we're inclined to believe it.

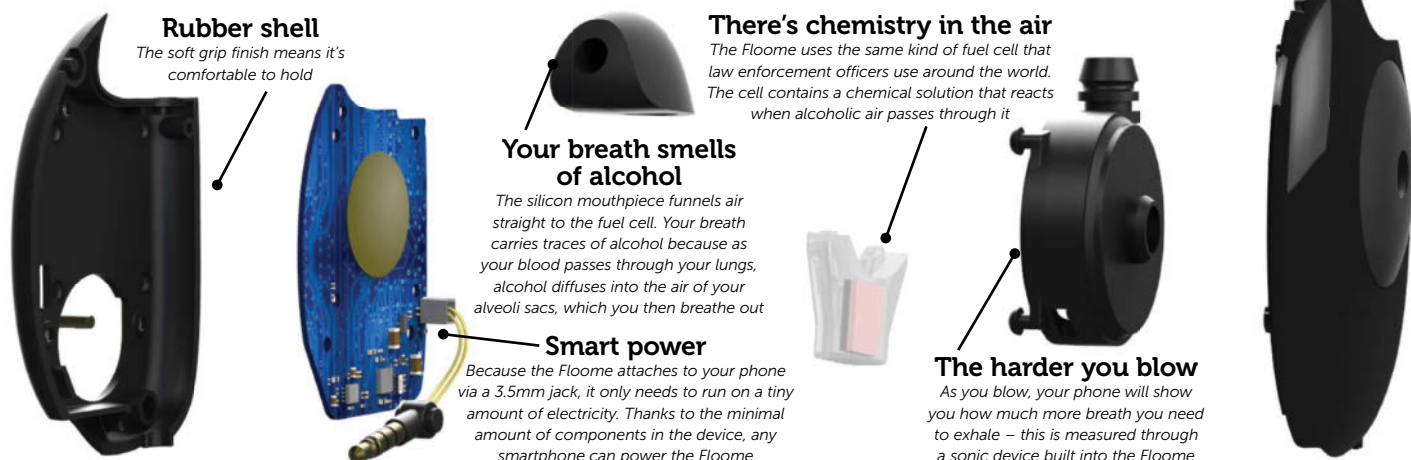
Floome boasts all of the minimalist sleekness of its Venetian, Italian design whilst rocking all the functionality and practicality of a smart bit of police equipment (after all, it uses the same technology that law enforcement officers use when they pull people over at the side of the road). The gadget was funded by an Indiegogo campaign that aimed to do the one thing that other breathalysers on the market don't do:

combine a sleek aesthetic with actually practical functionality that a lot of people can make use of.

A cursory look at the competition proves two things: firstly, that the mobile breathalyser market is overrun with cheap, ineffective gadgets that are unreliable and could effectively lose you your license or put you in prison. Secondly, there's no middle ground – if you don't want to risk a cheap device then you'll have to pay over the odds for ugly and cumbersome bits of technology that (frankly) aren't worth the cost. Floome manages to hit upon a great middle ground and comes with some bonus functionality too – it installs onto *any* smartphone and can call you a taxi, find you a restaurant and chart your drinking habits too. All in all, it's the little angel standing on your shoulder that argues with the drunk devil on the other.



HOW IT WORKS For a compact device, there's a lot going on in the Floome



Rubber shell

The soft grip finish means it's comfortable to hold

Your breath smells of alcohol

The silicon mouthpiece funnels air straight to the fuel cell. Your breath carries traces of alcohol because as your blood passes through your lungs, alcohol diffuses into the air of your alveoli sacs, which you then breathe out

Smart power

Because the Floome attaches to your phone via a 3.5mm jack, it only needs to run on a tiny amount of electricity. Thanks to the minimal amount of components in the device, any smartphone can power the Floome

There's chemistry in the air

The Floome uses the same kind of fuel cell that law enforcement officers use around the world. The cell contains a chemical solution that reacts when alcoholic air passes through it

The harder you blow

As you blow, your phone will show you how much more breath you need to exhale – this is measured through a sonic device built into the Floome

BREATH TESTS

How do breathalysers find out how much you've had to drink?

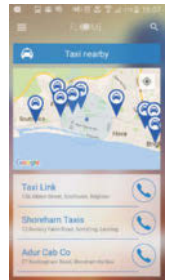
Breathalysers use the way the body processes alcohol to analyse how much you've had to drink. As oxygen passes into your bloodstream when you breathe, alcohol passes into the air in your lungs and it's this alcohol that breathalysers measure using two different methods. Roadside breathalysers use fuel cells to measure alcohol content by creating a chemical reaction that oxidises the alcohol and produces an electrical current that increases in strength depending on how much alcohol is present. Larger breathalysers commonly used in police stations use spectrophotometers to achieve the same results. These identify molecules based on how they absorb infrared light, they then count how many ethanol molecules are present and use them to measure the alcohol content of the subject's blood.



WHAT ELSE CAN IT DO?

Call a taxi

If you're on a night out and Floome says you've had too much to drink, the app can detect nearby companies and call a taxi for you



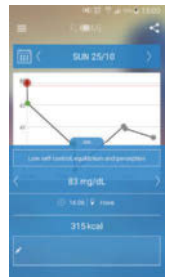
Keep a drink diary

By telling the Floome your weight, height and gender, it can accurately measure your alcohol intake and make an easy-to-read chart



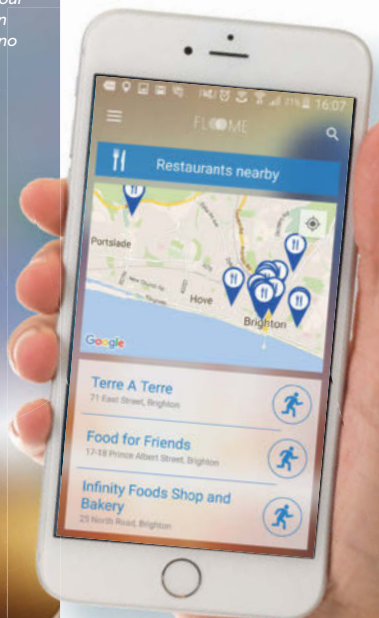
Keep you fit

Floome can even tell what you've been drinking and can provide calorie counts for those drinks. It can also say exactly how many calories you drank in a night



Anyone hungry?

Need to sober up? Floome's app can locate nearby restaurants and give you directions



Mouthpiece

The mouthpiece is washable. Soon you will be able to buy replaceable mouthpieces so your friends can use it too

Smartphone friendly

The Floome plugs straight into your headphone socket and runs on your phone's power, so there's no need to buy batteries

Traffic lights

Unsurprisingly, a red screen means you're over the drink-drive limit and a green screen means you're under

£64 | \$100
floome.com

Floome Breathalyser

The Floome breathalyser is the first of its kind in a busy market, combining a stylish design with modern and practical functionality by plugging into any smartphone.



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WORKSHOP

PROJECT

01

HOW TO PUT UP A SHELF STRAIGHT

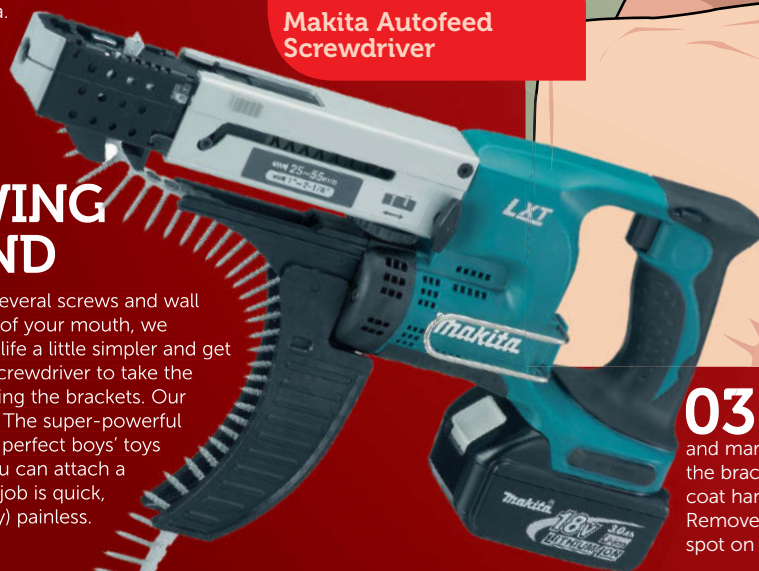
Hanging a shelf is easy, right? Famous last words, but we've got the gadgets to keep you on the level

It's said there's no greater test of a man's mettle than putting up a shelf. In theory, it's a simple task, but to attempt it without knowing the basics can lead to a DIY disaster, not to mention potential ridicule. So we have some tips to make it easy and ensure you have the best bragging rights.

As with anything in the DIY world, the trick is patience. Make sure you're fully prepared, have all your tools to hand and if you really want to look like you know what you're doing, then we recommend investing in the gadgets that are designed to make life easier for you. A cable detector could potentially save your life and a laser level not only guarantees you a perfectly straight line, but looks pretty cool too. Here are the steps to follow to get you to DIY Nirvana.

SCREWING AROUND

Rather than have several screws and wall plugs hanging out of your mouth, we suggest you make life a little simpler and get a decent electric screwdriver to take the hassle out of hanging the brackets. Our recommendation? The super-powerful Makita Autofeed is perfect boys' toys for any DIY job. You can attach a screw feed so any job is quick, easy and (hopefully) painless.



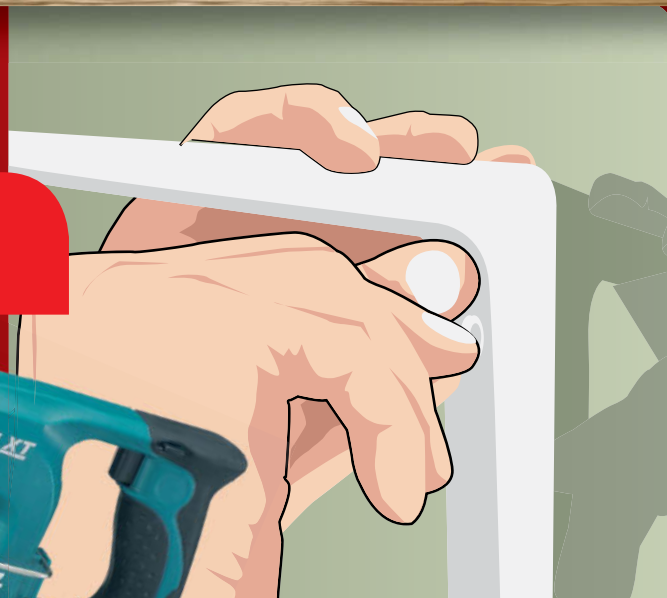
£178 | \$253
makitauk.com

**Makita Autofeed
Screwdriver**



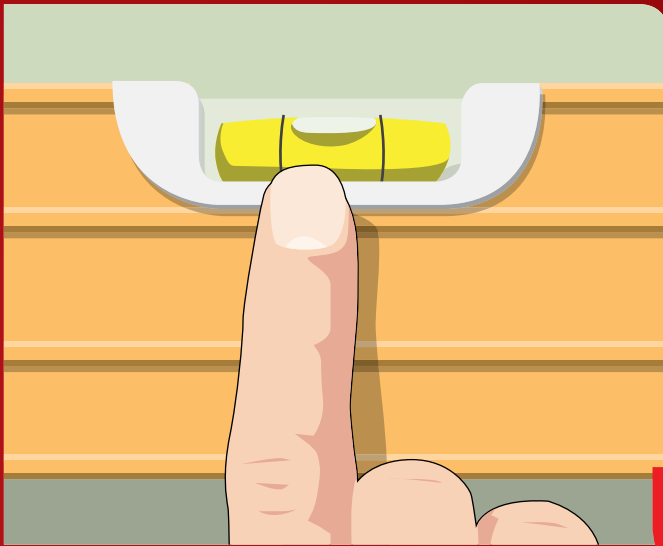
01 Preparation is the key

Firstly, you'll need to find the right spot for your shelf. Bear in mind that it may appear to be perfectly in the middle of a bare wall, but you need to make sure you're not drilling into pipes or cables. Use a decent cable detector (we recommend the Bosch PDO 6 Digital Detector for this) and avoid any spots where the indicator flashes.



03 Hit that sweet spot

Now hold the first bracket up against the line and mark the drill holes with a pencil – if the holes in the bracket are too small then you can use a piece of coat hanger wire or a bradawl tool to make the marks. Remove the bracket and add a nail dent to this exact spot on the wall to make the drilling more accurate.



02 An exact science

If you want to be really smug and use technology to make life much easier for yourself, then get a laser level to mark out the perfect straight line for the shelf. If you feel like doing it old school, place the shelf where you'd like it and use a spirit level to get it completely straight. Now mark a line directly underneath the shelf in pencil.

BISH BASH BOSCH

Messing around with a pencil and a spirit level is so last century, why not use the technology that's out there and do it in sci-fi style? A laser level simply clamps onto a piece of furniture, projects a perfectly straight line onto a wall and is an inexpensive way to guarantee that your shelf is perfectly level. One of the best around is the simple-to-use Bosch Quigo.



£42 | \$66

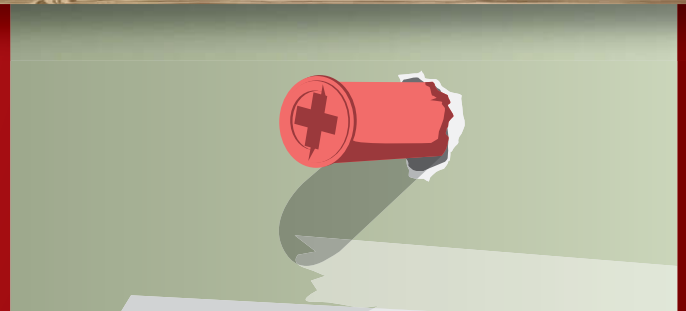
bosch-quigo.com

Bosch Quigo



04 Where there's a drill there's a way

You can use a standard drill bit for a stud wall, but you'll need a masonry bit if you're drilling into concrete. It will have to be a screw that's at least 30mm in length, so the easiest way to gauge this depth is to measure it on the drill bit and mark it with tape. Drill the holes slowly.



05 Plug the gap

Put in the wall plugs, firstly making sure they're the correct size for the hole. If they don't go in, either use a smaller plug or a slightly larger drill bit (going up 0.5mm should do it). Attach the bracket and then repeat the same process for the other. Simple!

THE BEST OF THE REST: LASER LEVELS

Black & Decker BDL 120

£15 | \$33

blackanddecker.com

Cheap and cheerful, this laser level has to be held up on the wall to project the line, but it does have a spirit level to keep things nice and straight.



DeWalt DW088K Self-Levelling Line Laser

£140 | \$135

dewalt.co.uk

If you're looking for something a bit more professional then the DeWalt Line Laser is pricey yet perfect.



Stanley Cubix Cross Line Laser

£36 | \$70

stanleytools.co.uk

Strong and sturdy, despite the low price, Stanley's laser level comes with its own clamp and has a range of up to ten metres.



Silverline Mini Laser Level (210mm)

£10 | \$20

silverlinetools.com

If you've secretly always desired a laser level, but price is an issue then they don't come cheaper than this one.



WORKSHOP

PROJECT
02

HOW TO JUMPSTART YOUR CAR

Recharging a car with a flat battery is a lot easier than you think

Having a car with a flat battery is something that most of us have experienced at one time or another. Often it's at night, in the middle of nowhere when it's chucking it down with rain – like something out of a horror film. But it's also one of the few things that can go wrong with a car that you can sort out with a minimum amount of fuss and mechanical know-how.

There are several ways to get your car up and running, ranging from the basic jumpstart to using modern battery packs like the brilliant Cobra JumpPack – no gadget fan will be out in the cold with a dead battery again if you have one of these in your boot.

Reusable

While the JumpPack is good for multiple uses, it comes with a 12V car charger so you can top it up whilst on the go

Gadget friendly

Using the USB port, you can charge your phone or tablet through the Cobra

Light up

There's a handy light on the front to help you connect the Cobra in the dark or you can use it to flag for help

LED indicator

The LED battery status indicator tells you how much power you have left

Easy connection

These standard jump leads simply connect to the back of the battery pack

£100 | \$130
cobra.com

Cobra JumpPack CPP 7500

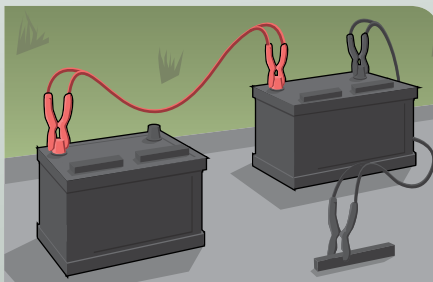
The Cobra JumpPack is the ideal solution to risky jumpstarts. It's small enough to be portable, but is still manages to squeeze in a 7,500 mAh battery.

Recharge car to car



01 Jump to it

All you'll need for this is a willing and kind person with a working car and a set of jump leads. Start by parking the two cars as close together as possible so that the jump leads will reach between the engines, then switch off the ignition in both cars.



02 Think positive

Attach the red lead to the positive terminal on the working battery and then the positive terminal on the flat one. Now connect the black lead to the working battery, but make sure the other end is attached to an earthing point on the other car and not on the battery.



03 The spark of life

Start the engine of the working car, leave it running for a minute and then try the ignition on the other car. If the engine starts, let it run for a couple of minutes before removing the jump leads. When you do remove them, do it in reverse order; so start with the black lead.

HOW TO USE THE COBRA JUMPACK



01 Battery power to the people

For peace of mind, there's nothing quite like having a portable battery pack to hand and the Cobra Jumpack is easily one of the best. To use it, first make sure that you disconnect all the battery cables from the Jumpack.

"The Cobra Jumpack is the ideal solution to risky jumpstarts"



02 Get connected

Now connect the red clamp to the positive terminal on the car's battery and the black clamp to the negative terminal. Reconnect the battery cables to the Jumpack and make sure they're firmly attached.



03 The key to success

Turn the ignition key for around three seconds and the car's engine should fire into life – if not, wait for around a minute before trying again. If all's good, disconnect the clamps from the battery and then leave the engine ticking over for a few minutes before heading off.

Perfect push start



01 Get into gear

If you don't have a battery pack or jump leads, or can't find anyone with a pair, then you're going to have to resort to the push start. Start by turning on the car's ignition, put the car into second gear and then push the clutch pedal to the floor.



02 Roll on down

If you're lucky enough to be parked on a hill then let the handbrake off and roll down – obviously when it's safe to do so – until the car reaches around ten miles per hour. Then let your foot off the clutch and press the accelerator pedal to make sure you don't stall.



03 Call for backup

If you're parked on the flat then you'll need some help pushing it. Again, wait until the car reaches about ten miles per hour before releasing the clutch and don't forget to let off the handbrake or else you could suffer the anger of those who are trying to push you!

WORKSHOP

PROJECT
03

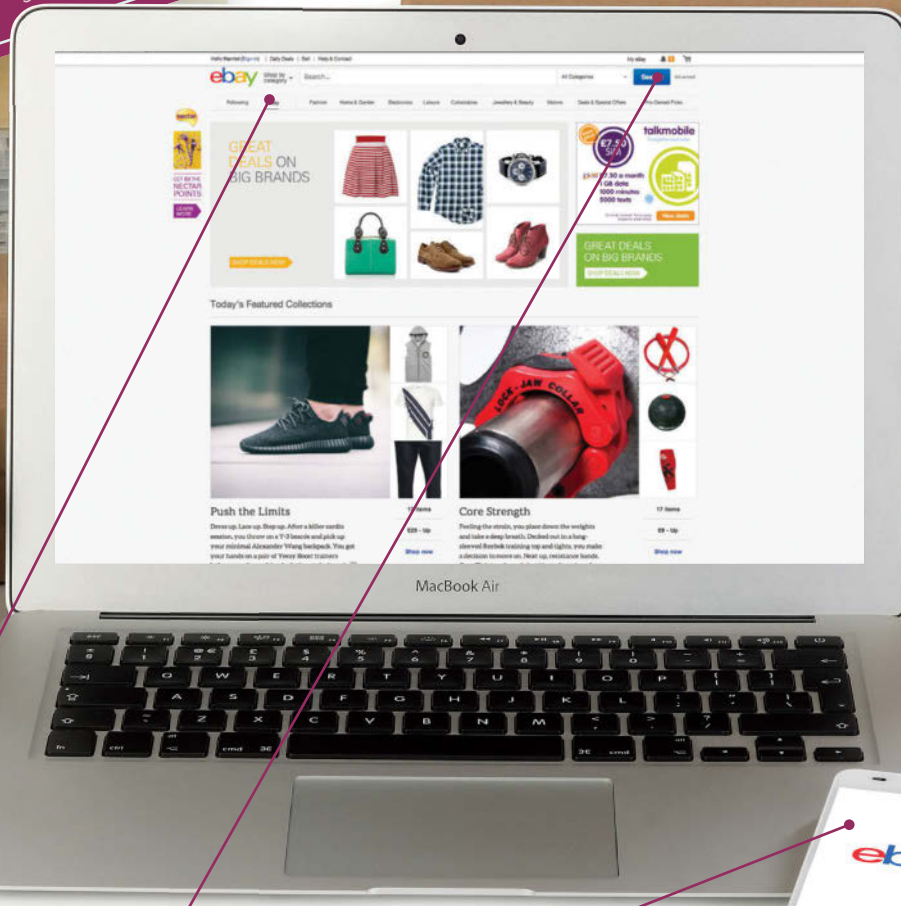
4 STEPS TO AVOID TERRIBLE EBAY CUSTOMER SERVICE

Or where to really go when you need help on eBay

EBay is brilliant when you have a load of stuff that you're desperate to get rid of, but the flip side is that it can also be a nightmare when things go wrong.

The first response is usually to grab the phone and try to speak to their customer services department, but the service they offer is notoriously dreadful and most

people we know are not big fans of being put on hold for a long time listening to Eighties music. All is not lost though as there are a multitude of ways to resolve any issues you might have whilst avoiding this bad service, as there are plenty of eBay users out there that probably know more than the people who run eBay.



Sign in

For solutions to common problems, go to the Help & Contact page (found at the top of the homepage), but you must sign in for it to work

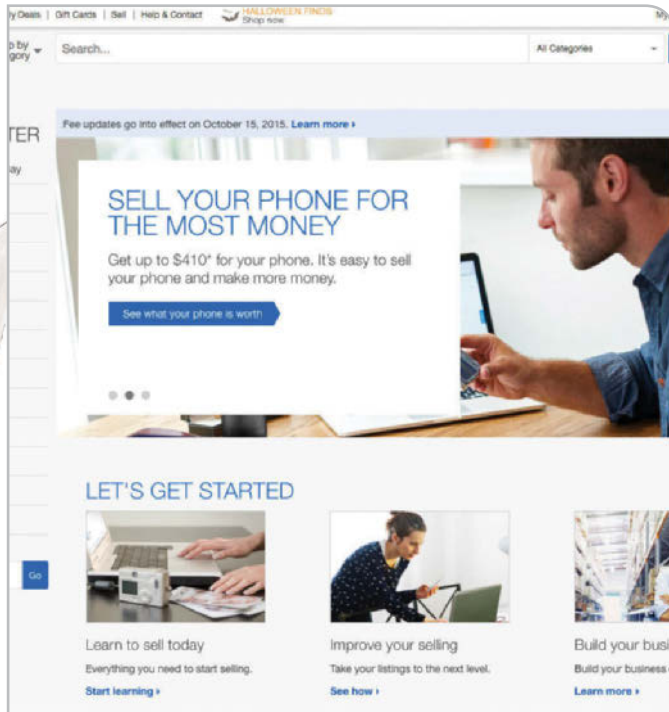
Slow emails

There is always the option to email the customer services team, but the replies can take a while and it still may be an automated response

Phone hurdles

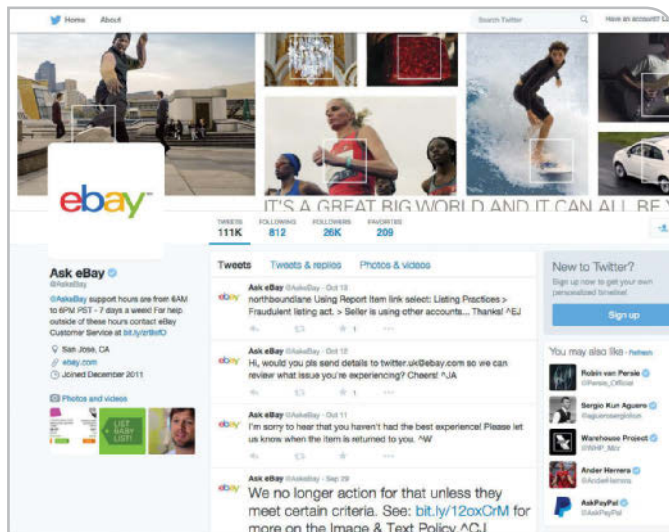
There have been many complaints about being put on hold for a long time. There's also the various automated stages to get through even before the phone rings

Most eBay problems can be solved without a phone call



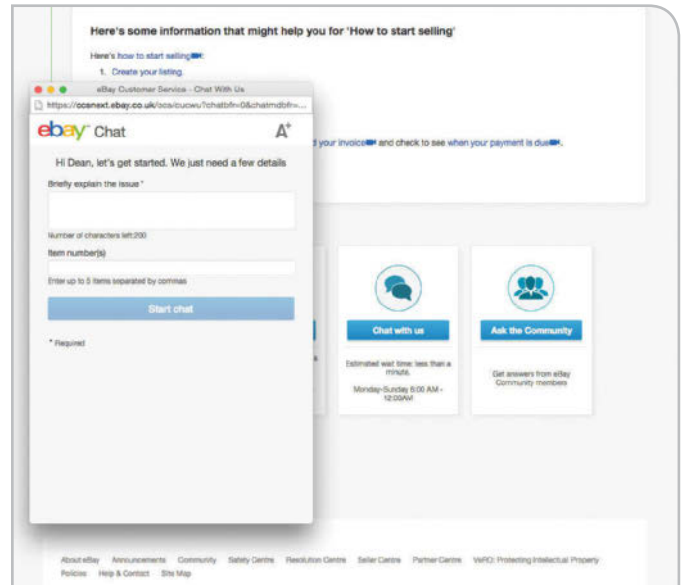
01 Basics of selling

If you're fairly new to the eBay world or are a casual user who's thinking of setting up an eBay business, then eBay's own Seller centre (sellercentre.ebay.co.uk) is actually surprisingly useful. Packed full of information on everything from what to sell to taking the best photos of your old dining table, there's every chance that your newbie query can be solved here on this page.



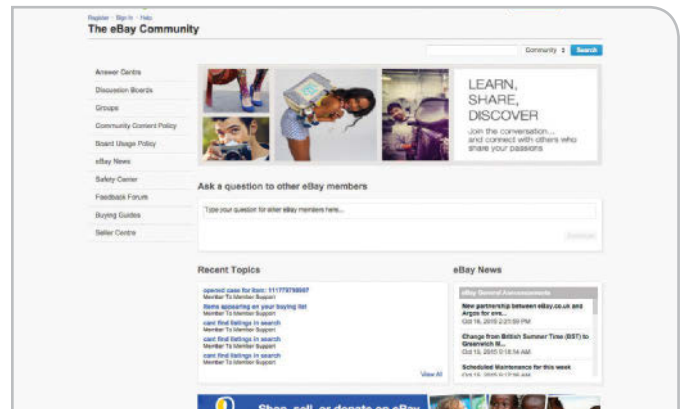
03 Send a tweet

For a fairly quick response from eBay themselves, you could try the Ask eBay Twitter page at @AskeBay. They're open seven days a week from six in the morning until six in the evening (Pacific Standard Time) and although most of the responses are along the lines of 'We're sorry to hear that, why don't you email us', there's also the small chance that they might be able to help if the problem is relatively straightforward. After all, there's no need for you to spend hours on the phone on hold if it's a simple problem that it can be solved in 140 characters.



02 Fancy a chat?

One area of eBay's customer services site that we have had some success with in the past is eBay Chat. Head to the customer services pages at ocsnext.ebay.co.uk/ocs/home and then click on Contact us at the bottom of the page. Click on the area you need assistance with and, hopefully, the Chat with us option will appear along with an estimated waiting time – this is usually only around a minute.



04 Care in the community

However, it's eBay's Community area (community.ebay.co.uk) where you're likely to have the best chance of finding someone to help you. Made up of a series of discussion areas, you simply post your question and wait for someone in the community to come back with an answer. Surprisingly, there are lot of people out there who really (and we mean *really*) know their stuff about eBay.

There are several advantages to going directly to the Community area rather than trying eBay's customer services' numbers or emails. Firstly, as the eBay Community pages work like any other forum and in real time, there's every possibility that your query will be answered quickly and accurately by another eBay member. Also, as it'll be read by a large number of people, you may well get multiple replies with varying suggestions offering different approaches to your problem. Although this can get confusing if the advice differs wildly, it's good to understand that most problems have more than one solution.

Finally, by scanning through the questions already posted (or searching through the thread titles) you may well discover that someone's already had the same problem you're having and there may already be a solution posted for you. This then saves you all the hassle!

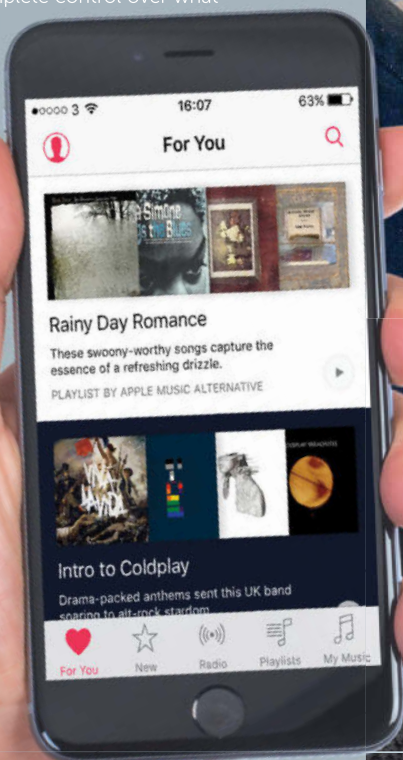
WORKSHOP

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04

HOW TO SET UP A FAMILY ITUNES ACCOUNT

Now you can share your music tastes easily with the whole family, from Eminem to David Bowie

In the bad old days, if you wanted to give your family access to the apps, music and videos you had downloaded through iTunes you could use Home Sharing, but it was difficult to monitor and anyone could download anything using your card details without your knowledge. Surprise, surprise, this often ended up being very expensive. However, all this has changed with iOS 8 and Family Sharing. Now you can have up to six family members sharing your iTunes library, but each one uses an Apple ID and you (as the main family organiser) have complete control over what they download – so you can block that download of Little Mix you really don't want to hear playing in your house.



SHARE AND SHARE ALIKE

Family Sharing means you can always find each other

Aside from your iTunes account, there are many other advantages to Family Sharing. For instance, you can set up a Family Membership to Apple Music for £14.99 (or \$14.99) per month or share your location through Find My Friends. Also, when one of your kids loses their iPhone, iPod Touch or iPad (and it will happen from time to time, believe us), the Find My iPhone app will pinpoint exactly where it is.

Need a hand with organisation? Family Sharing can help with that too. The Calendar app enables you to create a family calendar where everyone can add, view or change events. Everyone in the family will then get an alert when something is changed. Furthermore, the whole family can add photos and videos to an album using the Photos app, this can then be shared across all of your family's devices.

"You can have up to six family members sharing your iTunes library"

SET UP A FAMILY ITUNES ACCOUNT



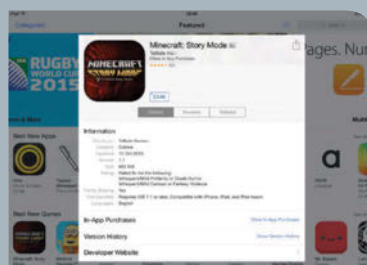
01 Get started

Setting up Family Sharing on your device couldn't be easier. To begin with, head to Settings>iCloud and tap on 'Set Up Family Sharing'. Here you will get a pop-up explaining the benefits of Family Sharing. Now tap Get Started.



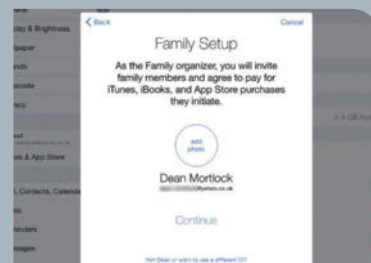
03 Add family members

Family Sharing is now set up and ready to go, so after going back to the Family area of iCloud, all you need to do is tap the option Add Family Member to add the first person. Type in either their contact name – which is linked to social media or your contacts library – or their email address.



05 App compatibility

While developers of apps have the option to opt out of Family Sharing, most apps are now compatible and all new ones should be. This means that apps already purchased can be downloaded by anyone in your family. To check an app, head to its entry on the App Store where there will be a label to show you whether or not it's compatible with Family Sharing.



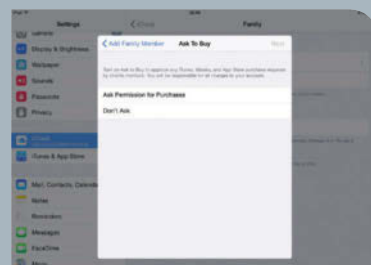
02 You've got the power

Your device will now set you up as the single and only person who is in control of all the family's accounts: the Family Organizer. So you have all the power, my friend. This means that you'll be the one that sends out the invitations to the family members you wish to add and you will also be the one to control the little ones' spending through the payment method attached to your ID.



04 Send an invitation

Send off the invitation and your contact will get an email informing them that they've been invited to join Family Sharing, even if they don't have iOS 8. You, as the Family Organizer, will then get a notification to let you know that they've accepted the request.



06 Be the banker

Ask to Buy is a feature that's useful to stop family members under the age of 18 buying apps or staggeringly expensive in-app purchases on your account, so you don't discover that *Angry Birds* IAPs have maxed out your credit card. You get the option to turn it on when creating an account for a child or it can be adjusted at any point by tapping on any of your family members. It basically means that any app purchase request cannot be completed until it's verified by the Family Organizer, ie you.

ADD THE KIDS

Under 13s can now have their own (restricted) Apple IDs

Although children under 13 aren't able to create their own Apple IDs, you are now able to make one for them that is automatically added to your family group and controlled through the Family Sharing settings. To create one, simply go to the iCloud option on either your device or through System Preferences on your computer and then click 'Create an Apple ID for a child'.

WORKSHOP

PROJECT

05

5 TIPS TO WRAP ANY GIFT

Take the stress out of wrapping up even the most annoyingly shaped presents

When you give someone a neatly wrapped present it makes you look talented and your gift appears to be more carefully chosen. But this is easier said than done if you're gift is anything other than a regular box shape. How do you wrap a bottle so you're friends don't just know you're returning the terrible wine they gave you last year? What's the best way to get extra curly ribbons? Joana Alve, a gift wrapping specialist at the world-famous Harrods store, answers these question and more as she reveals her pro tips for wrapping even the most awkwardly shaped items. If you find yourself still struggling or if you have left your gift wrapping until the very last minute before a big party, try our top gadgets to make the process as swift and simple as possible.

01 HOW TO WRAP A WINE BOTTLE

"As it's coming up to Christmas, we might suggest that we wrap the bottle in a cracker shape for the customer so that it looks beautiful and also disguises the shape of the bottle. We can also do it in a slightly different cylindrical shape with flowers in the top so that it looks like a vase."

02 HOW TO WRAP A BICYCLE

"Obviously if the bicycle comes in a box then it's easy, so we recommend you don't unpack it before wrapping. Otherwise, we would probably put a base under the bicycle and then wrap everything in cellophane so that it looks like a big hamper!"

03 HOW TO WRAP A CUDDLY TOY

"It's a difficult shape to disguise, but one thing you can do is wrap the toy in tissue paper first, which not only disguises its shape, but also helps to protect it – [this] is important, as we use double-sided tape to wrap here."

04 HOW TO WRAP ANYTHING ELSE

"Depending on the size and shape of the present, we would probably suggest that the item was put into a box first. You can pad out the box with tissue paper to make it look more presentable and then just wrap the box – finishing off with some ribbon will make it stand out too."



05

HOW TO GET PERFECT RIBBON CURLS

"Well, at Harrods we now use material ribbons made of cotton, which we think look more chic and elegant, but if you're doing it at home and want to curl the ends of the ribbon then it's easy to do. If you open up a pair of scissors and just run the edge of one of the blades along the ribbon (obviously taking care here not to cut yourself) then it'll automatically curl up."



THAT'S A WRAP

Essential accessories to make wrapping a breeze

Man Wrap

£5 | \$8

themonsterfactory.com

Take the hassle out of wrapping with the one of a kind Man Wrap. The foil wrapping paper design means that all you need to do is roll out the amount you need, rip it off, press it together and it's done. Christmas made easy peasy!



Sellotape On-Hand Dispenser

£3 | \$5

sellotape.com

A simple solution that's guaranteed to make wrapping a breeze, the Sellotape On-Hand Dispenser slides over your fingers to give you two hands completely free to wrap. You can even get patterned tapes for crafting too.



Scissortape

£6.50 | \$10

awesomeinventions.com

An idea so obvious and brilliant that you'll kick yourself for not thinking of it sooner – although if you're in the UK it's not easy to come by. As the name suggests, it's a scissor and tape combo, with the tape as part of the handle meaning you can then cut and stick at the same time!



Fibre-optic fist

Fibre optic tubes tracked finger movement. If light was unable to get through the tubes, the system knew your fingers were curled. A smart idea, but reportedly not very accurate

Limited games

Despite being designed for the incredibly popular NES console, only two games – Super Glove Ball and Bad Street Brawler – were released that used the device

Wired for sound

The Power Glove emitted a noise that humans can't hear, but two receivers attached to your TV could. From this, the system could triangulate your position to within a quarter of an inch

Taking control

The glove also had traditional D-Pad controls on the forearm, plus extra buttons that could be programmed for special finishing moves

Cheap components

The Power Glove cost \$75 in 1989, around \$150 in today's money. However, Mattel struggled to make the device even this affordable and was forced to use low-quality parts to save money. This minimised cost, but maximised user frustration with the glove offering an erratic performance

Whatever happened to...

The Power Glove

Long before the current trend for wearables, there was the **Power Glove**. It was revolutionary for its time, enabling players to use motion to control the Nintendo Entertainment System. While it grossed \$88 million in sales, poor functionality and a lack of games led to it becoming one of the greatest flops of all time.

They said...

"Now you're playing with power"
Nintendo advertising slogan

"I love the Power Glove, it's so bad!"
Lucas Barton, character in The Wizard (1989)

"The Power Glove was the item every NES owner of the Eighties wanted. Sadly, the reality of using one was nowhere near as much fun"
Darran Jones, Retro Gamer

Buy one today

Price: £65/\$100

Despite there being few compatible games, the Power Glove has become something of a bizarre curiosity among retro fans and an unused, boxed Power Glove can fetch around £350/\$500. Second-hand models, however, are much more affordable, averaging around £65/\$100 on eBay, according to [bidvoy.net](#). Don't forget to check if your online auction purchase also includes the all-important microphone bracket that fits to your TV, you will also need an original NES to make it work.

How it worked

The Power Glove emitted ultrasonic beeps that could be detected by microphones attached to your TV. Depending on how much time it took for the sound to reach the microphones, the system could triangulate where your hand was. Fibre-optic tubes in the glove registered finger movements.

Gadget

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